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ACCIDENT BULLETIN,

No. 1.

JULY, AUGUST, AND SEPTEMBER, 1901.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1902.

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ACCIDENT BULLETIN,

No. 1,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS,

AND


CASUALTIES TO PERSONS,

DURING

JULY, AUGUST, AND SEPTEMBER, 1901.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1902.



THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING SEPTEMBER 30, 1901.

The facts and figures herein set forth are taken from monthly reports filed with the Interstate Commerce Commission in accordance with the provisions of the act of March 3, 1901 (see page 9), requiring reports of collisions and derailments and of accidents of all kinds causing injury, fatal or otherwise, to passengers or to employees on duty.

The number of persons reported killed in the three months ending September 30, 1901, in collisions, derailments, and miscellaneous train accidents is 240, and of injured 2,622. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off cars, etc., increase the total number of casualties to 11,212 (725 killed and 10,487 injured). These accidents are classified in the following table. No reports are required of casualties at highway crossings, or to trespassers or persons walking along the track, nor to employees who are not on duty; and the classification does not include trifling accidents which, if tabulated, would needlessly swell the totals.

TABLE NO. 1.—Summary of casualties to persons; July, August, and September, 1901.

	Passen- gers.		Trainmen.		Other per- sons em- ployed on or around trains.		Switch- men, flag- men, and watch- men.		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
In collisions	44	809	81	614	10	84	4	19	8	179	103	896
In derailments	13	419	60	274	5	42	0	4	6	49	71	369
Miscellaneous train accidents, including locomotive boiler ex- plosions	0	9	7	96	0	8	0	4	2	12	9	120
Total train accidents	57	1,237	148	984	15	134	4	27	16	240	183	1,385
Coupling or uncoupling cars	0	0	24	408	0	11	6	49	0	6	30	474
While doing other work about trains, or while attending switches	0	0	10	701	1	46	1	55	2	108	14	910
Coming in contact with overhead bridges, structures at side of track, etc	2	24	26	241	1	7	0	20	2	15	29	283
Falling from cars or engines, or while getting on or off	42	380	102	1,238	6	55	12	84	15	191	135	1,568
Other causes	9	485	56	1,047	14	117	30	149	124	2,428	224	3,741
Totals (other than train ac- cidents)	53	889	218	3,635	22	236	49	357	143	2,748	432	6,976
Totals, all classes	110	2,126	366	4,619	37	370	53	384	159	2,988	615	8,361

The number of passengers killed in collisions and derailments during this quarter—57—is very large, and is equal to more than half of the total shown for twelve months in the Commission's annual report for 1900. The present record is swelled by a single collision in August, in which 28 passengers and 3 employees of the road were killed. This collision, due to a runaway of freight cars on a long and steep grade, can not be satisfactorily classified as to cause, as the officers of the road report that the cars which ran away had been left on a side track, suitably secured by hand brakes; and they have not discovered how the brakes were released.

The next most serious accident in August, causing the death of 9 passengers and 1 trainman, was also due to some cause not discovered. A passenger train while running at moderate speed was derailed with disastrous results, but no defect was found in cars, engine, or track. It is supposed, therefore, that some obstruction may have been maliciously placed on the track.

The number of passengers killed in collisions and derailments in July was 7, and in September 8 were killed from these causes. In one collision, occurring in July, 4 passengers and 5 trainmen were killed and 57 persons were injured. This collision, damaging the railroad company's property to the extent of over \$50,000, was due to forgetfulness on the part of the conductor and engineman of a freight train. These two men were killed in the collision. The conductor had served in that capacity ten months and the engineman eight days. Both had had several years' experience in subordinate positions.

Of the passengers killed in September, 6 are accounted for in a single collision, due to the careless movement of a freight locomotive on a track parallel to one on which a fast passenger train was passing. A misplaced switch was overlooked and the engine ran against the side of the passing passenger cars, overturning them.

The total number of collisions and derailments was 2,249 (1,247 collisions and 1,002 derailments), of which 217 collisions and 90 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$1,842,224, namely: July, \$600,047; August, \$648,249; September, \$593,928.

Given more in detail, these facts appear as below:

TABLE No. 2.—*Reports for July, August, and September, 1901.*

	Number.	Loss.
Collisions due to trains separating.....	189	\$80,887
Other collisions.....	1,058	957,662
Total.....	1,247	\$1,038,499
Derailments due to defects of roadway, etc.....	134	114,661
Derailments due to defects of equipment.....	452	361,409
Derailments due to negligence of trainmen, signalmen, etc.....	73	32,693
Derailments due to unforeseen obstructions, etc.....	66	74,477
Derailments due to malicious obstruction of track, etc.....	20	28,492
Derailments due to other causes.....	257	191,993
Total.....	1,002	803,725
Total collisions and derailments.....	2,249	\$1,842,224

It will be observed that the average loss by each collision was approximately \$833, and by each derailment \$802. The total amount of damage to property (which does not include damage to merchandise in cars) does not vary much from month to month; yet the individual cases vary greatly. In July, 7 accidents caused an aggregate loss under this head \$127,210. In August, 4 accidents cost \$91,300, two of these aggregating \$70,000. One of these latter was the collision in which 31 persons were killed.

No comparisons can be made with former records, as records have never before been made for periods shorter than one year, and train accidents, as such, have not been reported to the Commission in any shape; but the diminution in "coupler accidents," due to the general use of automatic couplers, may be roughly measured by comparing the present record for three months with one-fourth of the total for one year as shown in former reports. For the year ending June 30, 1900, the Commission reported 282 employees killed in coupling and uncoupling. One-fourth of this number, 70½, is more than twice the number now reported for one-quarter of a year.

An examination of the reports of individual cases in this class of accidents shows that an appreciable percentage is made up of cases occurring in what may be called emergency work, such as coupling to a car which has just been in a slight accident, and on account of which the automatic coupler has been taken off the car or is out of order. Such irregular work is practically unavoidable, and the injury record, to the extent that it is produced by cases of this kind, is not to be taken as showing anything to the discredit of either the automatic coupler or the men doing the work.

Another point noticeable in the individual reports is the occurrence of accidents to men who have been only a few months in the service. The cases in which the report says that the injured man has been a brakeman or switchman for less than one year are not, perhaps, to be called numerous, yet their frequent recurrence suggests the need of a

period of carefully managed apprenticeship for the proper training of a brakeman. That a considerable percentage of injuries in this class is due to some defect in the coupler is a matter of common knowledge.

This point was alluded to in the fifteenth annual report of the Commission to Congress. These defects are often very slight, and many of them are due to lack of intelligent care rather than to faults of material or design. A good share of them are to be classed as unpreventable except by the gradual improvement in design of parts and by added experience on the part of the men. This, of course, means that trainmen should exercise particular care for their own safety when any coupler or coupler attachment is in the slightest degree out of order.

“Coupler accidents” and those due to falling from cars, having for years constituted the two most prominent classes in the lists of casualties to trainmen, have received special attention. These classes, therefore, are reported in some detail in the two tables following, Nos. 3 and 4:

TABLE NO. 3.—*Causes of accidents to employees in coupling and uncoupling.*

Sub-class.		Conductors.		Brakemen, etc.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.) preventing quick work				5		
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism)		3	2	33		
3	Other causes, apparently due to defective coupler mechanism		3	1	25		
4	Defective draft gear (with automatic coupler)				8		
5	Coupling to an engine or tender				1		
6	Same (with link and pin coupler)				5		
7	Coupling on inside of sharp curve		1		14		1
8	Foot caught in or between couplers while adjusting coupler		4		35		1
9	Slipped (usually on ice or snow)		1	1	11		
10	Foot caught in frog, guard rail, or switch			4	5		
11	Caught by overhanging load (on platform car)				1		
12	Load shifted				2		
13	Engaged in operations preliminary to coupling			4	28		1
14	While coupling safety chains				5		1
15	Link and pin coupler				8		
16	Link and pin, with automatic				1		
17	Coupling damaged cars (presumably an unavoidable risk)			3	8		1
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism)				20		
19	Uncoupling, other causes						
20	Miscellaneous			5	71		3
21	Not clearly explained		8	10	154		11
	Total		20	30	485		19

Of the accidents here recorded 12 are reported as having occurred in handling passenger cars.

TABLE NO. 4.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Conduc-tors.		Brake-men, etc.		Engine-men.		Firemen.		Other em- ployees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—										
	1 Defect in car		1	2	39						2
	2 Ice or snow			1							
	3 Parting of train		2	1	11						
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3	1	5	8	92		1		2	1	12
	5 While setting brakes		1	5	29						1
	Fell from—										
	6 Coal car				1						
	7 Freight car other than box or coal car		1		1					1	3
	8 Engine or tender	1	1	14	85	1	9	3	80		7
	9 Passenger car				1						
	10 Engines, tenders, or cars (all kinds) not in motion				18		3		4		4
	11 Miscellaneous causes	2	20	17	402		9	1	20	2	113
	12 Not clearly explained	1	3	40	160		2	1	8	6	51
	13 Slipped getting on moving trains or cars	1	7	6	82				1	5	33
C7	14 Jumping off moving trains		7	2	43					2	30
	15 Jumping from engines or cars anticipating collision, derailment, or other accident				22		2		7		4
	16 Fell from engines or cars by reason of defective handholds and sill steps		2		16						4
	17 Getting on or off moving engine		4	9	111		7		10	1	19
	18 Caught in frog, guard rail, or switch		1		2						
	Total	6	55	106	1,115	1	33	5	82	18	283

In Table No. 3, subclasses 2 and 13 may be taken together. No. 13 includes cases due to the common practice of opening knuckles by hand when moving cars are coming dangerously near each other. In cases under No. 7 a certain amount of contributory negligence is indicated, for even an inexperienced man should be able to comprehend the danger in entering between two cars on a curve. The number of injuries in No. 8 affords a striking illustration of the fact that energetic men will habitually take risks when engaged in work which must be done quickly. To adjust a coupler laterally by pushing or kicking it with the foot (often done when the car is in motion) is dangerous, probably, nine times out of ten; and yet the motive of the person who does this thing—to expedite the work of the whole crew—can be spoken of only in terms of commendation. The large number in subclass 21 indicates that many officers making reports should see that details are more clearly given.

In Table No. 4 we find, as in No. 3, a considerable number of cases in which the cause of the accident is not clearly explained; but an inconclusive statement is probably more often justifiable in this class than in the other. In subclass No. 1 of this table the number of injuries seems large. The fact would seem to indicate the necessity of careful and systematic inspection of grab irons, which are doubtless responsible for many of these accidents, by reason of their

being broken or loose. Subclass 4 includes, no doubt, many causes which would be classed as usual hazards of the work. The specific lessons, so far as they appear from circumstances given in the reports, have to do with the danger of giving violent hand signals; of carelessness, when "kicking" cars, in judging distances; of using airbrakes on only a portion of a number being moved, and other well-known practices.

No. 13 covers a class of accidents familiar to all. As everyone knows, there is no remedy for these except that which is in the hands of the employees themselves. While it would be manifestly unjust to sweepingly and unfeelingly class the whole of these accidents as avoidable, on the ground that the practice is unnecessary, it remains true that in most instances this would be the legal status of the case. The same is true of subclass 14.

No. 17 is similar to 13 and 14, but is to be looked at with more consideration, on account of the very common practice, in yards, of jumping on and off the end footboards of switching engines under circumstances where the necessities of the work seem almost to require the men to take a little risk now and then.

Classes 6, 7, 9, and 10 have been introduced so that the totals shown therein may be excluded from the total of all injuries, thereby promoting accuracy in the study of the causes of accidents on and around high freight cars in motion.

The other subclasses, in Tables 3 and 4, will be understood without explanation.

Among the deaths and injuries to employees shown in Table No. 1 (including some which are shown in subclasses in Table No. 4) there are 130 cases that are evidently due to operating trains in which airbrakes were used on only a portion of the cars. Of killed there were 4 and of injured 126, nearly all being brakemen. The total number of collisions and derailments classed as due (1) to rupture or failure of air-brake hose (or other defect in air-brake apparatus, causing automatic application of brakes) and (2) to accidental uncoupling of cars, causing automatic application, is 205, causing damage to the extent of \$88,612. The 130 casualties occurred partly in these collisions and derailments and partly in similar mishaps which were not of sufficient importance, as train accidents, to be reported as such.

The element of danger in a train "partially air-braked" lies in the fact that a quick stoppage of the cars in the front of the train (by air pressure) for any reason, causes the unbraked cars at the rear to crowd forward against those in front with such force that violent shocks are caused. With all cars equally braked, all will stop in unison, or nearly so.

It will be understood that failure or neglect to use air brakes on a sufficient number of cars may result from any one of three causes: (1)

A considerable portion of the cars may be unequipped with air-brake apparatus. (2) A small portion—a very few—of the cars may be unequipped, but may be placed at or near the front end of the train, preventing air connection with all those behind them (under circumstances where, if placed at the rear, they would not introduce a serious element of danger). This practice is due either to negligence or to the belief that the protection to be had from the use of the brakes is not of enough importance to justify the expenditure of time that would be required to change the cars from the front to the rear of the train. (3) On and near steep descending grades the air pipes on a portion of the air-brake cars, in a long train, may be deliberately left unconnected from the air-brake apparatus of the engine with the avowed purpose of making the train more manageable. Some railroad officers still hold that in consequence of the difficulty of regulating the slack, or the liability of the brake apparatus not being in perfect order, it is safer under some circumstances to regulate the speed wholly or partly by the use of hand brakes. It is gratifying to state, however, that upon roads having the steepest grades this view has been abandoned, and trains are invariably controlled by power brakes.

The above total, 130, includes only those cases which clearly come within this class. There are many other accidents, no doubt, classed as “falling from cars” in which the injuries are partly due to violent movements of cars which would not occur if all the cars in the train were under the full control of the engineman, by means of his air-brake valve.

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

ACCIDENT BULLETIN,

No. 2.

OCTOBER, NOVEMBER, AND DECEMBER, 1901.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1902.

ACCIDENT BULLETIN,

No. 2,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS,

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OCTOBER, NOVEMBER, AND DECEMBER, 1901.

INTERSTATE COMMERCE COMMISSION,

WASHINGTON, D. C.

WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1902.



THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 2.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING DECEMBER 31, 1901.

The number of persons killed in train accidents during the months of October, November, and December, 1901, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 272, and of injured, 2,089. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off cars, etc., bring the total number of casualties up to 11,048 (813 killed and 10,235 injured). These accidents are classified in the following table. As explained in Bulletin No. 1, these reports deal only with (a) passengers, and (b) employees on duty; and slight injuries of employees are omitted.

TABLE No. 1.—Summary of casualties to persons; October, November, and December, 1901.

	Passen- gers.		Train- men.		Other per- sons em- ployed on or around trains.		Switch- men, flag- men, watch- men.		Other em- ployees.		Total employees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
In collisions	47	609	129	743	7	65	0	8	16	54	152	870
In derailments	4	142	56	227	3	44	0	6	1	33	60	310
Miscellaneous train accidents, includ- ing locomotive boiler explosions ..	0	11	9	136	0	1	0	4	0	6	9	147
Total in train accidents	51	762	194	1,106	10	110	0	18	17	93	221	1,327
Coupling or uncoupling cars	0	0	32	481	1	10	4	79	1	7	38	577
While doing other work about trains or while attending switches	0	1	14	805	8	41	4	60	4	74	25	980
Coming in contact with overhead bridges, structures at side of track, etc	2	3	23	292	0	6	0	20	2	6	25	324
Falling from cars, or engines, or while getting on or off	23	344	123	1,578	9	43	9	98	16	154	157	1,873
Other causes	9	273	73	1,209	8	102	34	125	147	2,335	262	3,771
Total (other than train acci- dents)	34	621	265	4,365	21	202	51	382	170	2,576	507	7,525
Total, all classes	85	1,383	459	5,471	31	312	51	400	187	2,669	728	8,852

NOTE.—Columns 11 and 12, "switchmen, flagmen, and watchmen," include switch tenders (not acting as brakemen), lever men, and lamp men; track, bridge, and crossing watchmen and policemen.

The number of passengers reported killed in collisions and derailments during this quarter is large; nearly as large as in the quarter preceding, in which there were three collisions and one derailment that caused 47 fatal accidents to passengers. In the present record there are many serious butting collisions, one in November, between fast passenger trains, causing the death of at least 23 passengers. This collision (the last one in the list given on page 5) was mainly due to forgetfulness on the part of an engineman of long experience. The trains were ordered to meet at a station where it appears there was no telegraph office, so that there was no station signal to be used as a check on the possible forgetfulness of enginemen.

Of the other passengers reported killed in November, 5 met their deaths while riding on freight trains, four rear collisions of freight trains, fatal to passengers, having occurred in that month. In October only 1 passenger was killed in a train accident. In December there were 20, of whom 10 were killed in two butting collisions. In both of these cases conductors and enginemen of experience, and with long records of apparently satisfactory service, ran past the station at which they had been instructed to meet the opposing train. The reports do not indicate that the men had been overworked in either case.

The total number of collisions and derailments was 2,358 (1,481 collisions and 877 derailments), of which 257 collisions and 65 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,075,091, namely: October, \$622,310; November, \$645,565; December, \$807,216.

Given more in detail, these facts appear as below:

TABLE No. 2.—October, November, and December, 1901.

	Number.	Loss.
Collisions due to trains separating.....	199	\$101,611
Other collisions.....	1,282	1,238,202
Total collisions.....	1,481	1,339,813
Derailments due to defects of roadway, etc.....	128	106,922
Derailments due to defects of equipment.....	876	295,861
Derailments due to negligence of trainmen, signalmen, etc.....	70	38,720
Derailments due to accidental causes.....	54	95,199
Derailments due to malicious obstruction of tracks, etc.....	15	14,414
Derailments due to other causes.....	234	184,222
Total.....	877	735,278
Total collisions and derailments.....	2,358	2,075,091

It will be observed that the average loss by each collision was approximately \$904, and by each derailment \$838.

As noted above, the class of accidents which was most disastrous to the lives and limbs of passengers in this quarter was butting collisions—trains meeting head to head, and in many cases at nearly or quite full speed. The total amount of damage caused to cars and road-

way by collisions of this class was \$480,771. Of this sum more than five-eighths (\$306,511) is chargeable to 27 collisions, in which 70 persons were killed and 234 injured. To more fully show the character of this important feature of the accident record, the following table has been prepared, showing in brief the causes of these 27 collisions, these being the most notable cases in the record:

Causes of twenty-seven butting collisions.

Record number.	Train.	Killed.	Injured.	Damage.	Cause.
14	Passenger and freight.....			\$2,500	Dispatcher gave conflicting orders.
34	.....do.....			2,500	Conductor and engineman of freight disregarded rule of superiority of trains and occupied main track on the time of the passenger train. These men had been on duty 14 hours, 25 minutes.
12	.....do.....		9	2,985	Mistake in telegraphic order.
38	Freight trains.....	1	4	3,000	Ran past the meeting point.
17	.....do.....			3,400	Conductor and engineman overlooked meeting order.
33	Freight and unattached locomotive.....			3,400	Engineman (employed by a contractor, not by railroad company) misread an order—read 6 for 62.
39	Freight trains.....		6	4,600	Engineman neglected to observe train-order signal indicating "stop."
5a	.....do.....		4	4,900	Conductor and engineman "overlooked" opposing train.
15	.....do.....			4,900	Operator failed to deliver order.
5c	Passenger and freight.....	4	4	4,990	Assumed (without warrant) that a wreck would block the road and thus protect against opposing train.
3	Passenger trains.....			5,700	Engineman forgot meeting order.
11	.....do.....		9	6,000	Engineman (experienced) started from station 3 minutes ahead of time.
37	Freight trains.....	2	8	6,600	Engineman met a certain train; assumed it to be another train; failed to stop and positively identify.
4	Passenger and freight.....	1		7,400	Operator delivered an order not correctly written; had been in service 6 months.
7	Freight trains.....			7,500	Operator (of 5 years' experience) failed to deliver telegraphic order.
40	.....do.....	2		7,500	Train failed to wait at station as ordered.
35	.....do.....			8,000	"It is supposed that the engineman (of one of the two trains) had lost his bearings."
6	.....do.....	4		8,200	Mishandling of orders by dispatcher and operator.
13	Passenger and freight.....		12	9,200	Operator (of 5 years' experience) neglected to deliver order; had been on duty 10 hours.
36	Freight trains.....	1		9,500	Order not delivered. Day operator went off duty without notifying night operator that an order was on hand to be delivered.
65	Passenger and freight.....	4	80	10,000	Train ran past the appointed meeting station.
5	.....do.....		10	10,600	Conductor and engineman of freight overlooked on the timetable the schedule of the passenger train.
5b	Freight trains.....	3	1	12,000	Neglected to send out flag.
16	.....do.....	4	9	12,136	Conductor and engineman failed to carefully read train register.
67	Passenger and freight.....	11		41,800	Forgot telegraphic order or miscalculated time.
60	Passenger trains.....	7	17	72,200	Left station 5 minutes earlier than special order authorized.
57	.....do.....	26	111	35,000	Engineman forgot or misread meeting order.
	Total, 27 collisions.....	70	234	\$306,511	

It is to be observed that in most cases the brief sentences giving the causes of these collisions do not by any means afford a satisfactory explanation of the precise circumstances which resulted in the accident. Some of these paragraphs have been condensed in this office, but most of them state the cause in substantially as full detail as it is given in the railroad company's report to the Commission. The law requires the companies to report the causes of collisions and the circumstances accompanying each; and the Commission, with a view to facilitating the making of reports and to avoid unnecessary clerical labor in gathering facts which are not needed, has directed that the report shall state the cause or causes as reported to the general manager or other chief officer, by the local officer in immediate charge of the division of road where an accident occurs. This requirement, however, is not very well complied with; that is to say, in a case of negligence—nearly all collisions are due to negligence—the manager seems to be satisfied with a statement, for example, that a telegraph operator failed to deliver a meeting order; or that a conductor, in consulting the time-table schedule of a superior train, made the mistake of reading the wrong column, or overlooked a word or figure; or again, a statement showing that an engineman forgot that a certain order had been delivered to him, but not showing whether or not the conductor of the train, equally responsible with the engineman, did or neglected to do anything to check or correct the engineman. As reports are made under oath by officers acquainted with the requirements of the law, the Commission is fairly justified in assuming that these incomplete statements are deemed by the men who make them reasonable explanations. In many cases, no doubt, the disciplinary action taken by the division officer throws additional light on the case, sufficient to make the report satisfactory to the general manager. The facts concerning dismissals and punishments are not, however, reported to the Commission, except by a very few managers, the custom of years in reporting to State authorities being, no doubt, the guide that is followed in this respect. But the object aimed at in requiring the causes of accidents to be recorded in a Government office is to gather such data as may be ascertainable concerning the remedy that should be applied for the removal of such causes; and to this end the reports to the Commission should be full and explicit. In view of the somewhat experimental nature of the reports, the Commission has not as yet required the amendment and amplification of individual reports (the need of which is here indicated) except in a very few cases; but it seems likely that, if the purpose of the law is to be accomplished, it may become necessary to issue a more detailed code of rules for the description of collisions and their causes. It is obvious that any one of the causes set forth in the foregoing list of 27 cases might lead to as

great loss of life and property as was caused by the worst collision in the list. The simplest error may produce the greatest disaster. The first step, therefore, in any movement looking to the reduction of the railroad-accident record—which record may not unfairly be characterized as a reproach to the country—is to learn and state the causes of accidents in such full detail as may be necessary to make possible a thorough analysis.

The number of fatal “coupling accidents,” 38, is considerably larger than in the preceding quarter. This increase, no doubt, may be fairly attributed to the increased dangers incident to colder weather, and in part also to the greater number of freight trains run on the principal lines in the autumn. The following table, No. 3, shows the causes of these accidents in detail:

TABLE No. 3.—*Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.		Conductors.		Brakemen, etc.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.) preventing quick work.....		1	2	3		
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism).....		1		9		
3	Other causes, apparently due to defective coupler mechanism.....		1		24		
4	Defective draft gear (with automatic coupler).....						
5	Coupling to an engine or tender.....				6		
6	Same (with link-and-pin coupler).....				2		
7	Coupling on inside of sharp curve.....		1	1	30		1
8	Foot caught in or between couplers while adjusting coupler.....				22		
9	Slipped, usually on ice or snow.....				2		
10	Foot caught in frog, guard rail, or switch.....			5	12	1	
11	Caught by overhanging load (on platform car).....				6		
12	Load shifted.....				2		
13	Engaged in operations preliminary to coupling.....		2	5	45		1
14	While coupling safety chains.....				3		
15	Link-and-pin coupler.....				27		
16	Link and pin, with automatic.....				19		
17	Coupling damaged cars (presumably an unavoidable risk).....		2		30		
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism).....			3	44		
19	Uncoupling, other causes.....			5	20		1
20	Miscellaneous.....	1	4	4	118		8
21	Not clearly explained.....		3	10	142	1	2
	Total.....	1	15	35	546	2	13

Of the coupling accidents here recorded, 39 are reported as having occurred in handling passenger cars. Table No. 4 (below) also shows in its principal items considerable increases over the preceding quarter. The most marked change is in subclass 2, representing a cause already alluded to. The much larger number of fatal injuries caused by jumping from moving trains (subclass 14) is also explainable in part, very likely, by the same fact.

TABLE NO. 4.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Conduc-tors.		Brake-men, etc.		Engine-men.		Firemen.		Other em- ployees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—										
	1 Defect in car		1		43						
	2 Ice or snow			2	36				1		
	3 Parting of train		1	2	19						1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....		7	7	114		1	1	6	1	7
	5 While setting brakes		2	6	46						
	Fell from—										
	6 Coal car			3	2						1
	7 Freight car other than box or coal car		1		6						1
	8 Engine or tender		2	12	92		8		28		4
	9 Passenger car				5		1				4
C7	10 Engines, tenders, or cars (all kinds) not in motion				22		6		4		9
	11 Miscellaneous causes	3	32	14	408	1	10		30	5	123
	12 Not clearly explained	4	9	54	149		2		7	7	6
	13 Slipped getting on moving trains or cars		8	8	94		1			3	30
	14 Jumping off moving trains	2	12	11	101						25
	15 Jumping from engines or cars anticipa- ting collision, derailment, or other ac- cident				29		7		10		1
	16 Fell from engines or cars by reason of defective handholds and sill steps		1		47						1
	17 Getting on or off moving engine		11	10	186	1	14		14		17
	18 Caught in frog, guard rail, or switch.....				7						
	Total	9	87	129	1,406	2	50	1	100	16	230

[PUBLIC—No. 171.]

An Act Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

ACCIDENT BULLETIN,

No. 3,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS,

DURING

JANUARY, FEBRUARY, AND MARCH, 1902.


INTERSTATE COMMERCE COMMISSION,

WASHINGTON, D. C.

WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1902.



THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN NO. 3.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING MARCH 31, 1902.

The number of persons killed in train accidents during the months of January, February, and March, 1902, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 212, and of injured, 2,111. Accidents of other kinds, including those sustained by employees while on duty, and by passengers in getting on or off cars, etc., bring the total number of casualties up to 10,223 (665 killed and 9,558 injured). These accidents are classified in the following table. These statistics cover only two classes—(1) passengers, and (2) employees on duty.

TABLE NO. 1.—*Casualties to persons January, February, and March, 1902.*

	Passen- gers.		Trainmen.		Other per- sons em- ployed on or around trains.		Switch- men, flag- men, and watch- men.		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
In collisions	26	501	95	660	1	59	2	10	6	34	104	763
In derailments.....	15	298	35	261	12	71	0	4	6	15	53	351
Miscellaneous train accidents, in- cluding locomotive boiler ex- plosions.....	0	27	12	156	0	1	0	3	2	11	14	171
Total train accidents	41	826	142	1,077	13	131	2	17	14	60	171	1,285
Coupling or uncoupling cars.....	0	0	31	477	2	8	2	54	0	11	35	550
While doing other work about trains or while attending switches	0	0	17	702	2	33	2	42	4	79	25	856
Coming in contact with overhead bridges or structures at side of track.....	1	2	20	239	0	0	0	19	1	6	21	264
Falling from cars or engines, or while getting on or off.....	8	254	97	1,530	6	46	7	100	14	142	124	1,818
Other causes	3	177	56	1,155	6	85	25	78	119	2,208	236	3,526
Total (other than train acci- dents)	12	483	221	4,103	16	172	36	293	168	2,446	441	7,014
Total all classes.....	53	1,259	363	5,180	29	303	38	310	182	2,506	612	8,299

NOTE.—The columns headed "Switchmen, flagmen, and watchmen" include switch tenders (not yard brakemen), levermen, and lampmen; track, bridge, and crossing watchmen and policemen.

The number of passengers reported killed in collisions and derailments is not so great as in either of the last two quarters, but it is still large, two accidents having caused the death of 29 passengers (and the injury of 182). One of these, in January, was a rear collision of passenger trains, and the other, in March, was the derailment of a passenger train running at full speed, followed by a fire. The collision was due to the carelessness or incompetency of the engineman of the rear train, who disregarded two fixed signals which showed warnings designed to protect the preceding standing train. This engineman had filled one position or another in train service for about twelve years, but he had been engineman on this line (where the collision occurred) for a period of only five months, and had been in charge of a passenger train on this line for only a very few trips. The line is one on which trains follow one another (in the morning and in the evening) at very short intervals—two or three minutes—yet it appears, from the report of the state railroad commissioners, who investigated the accident, that this engineman was inexperienced, lacked reasonable presence of mind when he failed to see the signals, and unmistakably violated a well-known rule. The state railroad commissioners also characterized the engineman as of “unascertained capacity,” and they declare, therefore, that the railroad company was grossly negligent.

The report of the derailment says that the cause is unknown. The accident occurred in the night, and it is conjectured that there may have been an obstruction on the track.

As in the last preceding quarter, there were a number of passengers killed in rear collisions of freight trains, the passengers being in the cabooses. Seven passengers were thus killed.

The total number of collisions and derailments was 2,058 (1,220 collisions and 838 derailments), of which 221 collisions and 84 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$1,914,258, namely; January, \$651,751; February, \$657,969; March, \$604,538.

Given more in detail these facts appear as below:

TABLE NO. 2.—*January, February, and March, 1902.*

	Number.	Loss.
Collisions due to trains separating.....	194	\$80, 149
Collisions due to other causes.....	1, 026	924, 875
Total collisions	1, 220	1, 005, 024
Derailments due to defects of roadway, etc.....	143	101, 344
Derailments due to defects of equipment.....	369	266, 032
Derailments due to negligence of trainmen, signalmen, etc.....	55	34, 078
Derailments due to accidental causes.....	55	223, 203
Derailments due to malicious obstruction of tracks, etc.....	10	6, 935
Derailments due to other causes.....	206	277, 602
Total.....	838	909, 234
Total collisions and derailments.....	2, 058	1, 914, 258

It will be observed that the average loss by each collision was approximately \$824, and by each derailment \$1,085.

In Bulletin No. 2, containing statistics of a number of particularly disastrous butting collisions, a tabular statement was given showing the magnitude and causes of the most important accidents of the quarter coming within that class. In the quarter now under review, rear collisions are the most prominent, and a table is therefore given of 41 of the most serious cases in that class; that is, of all involving over \$2,000 damage each. The list also includes one other, in which four passengers were killed, and one due to a "failure in block working." In all, there were, it will be seen, three collisions due to this last-named cause, and a fourth due to failure of an automatic block signal.

Causes of forty-one rear collisions.

Record number.	Train.	Killed.	Injured.	Damage to cars and engines and road-way.	Cause.
36	Freight trains	4	11	\$1,400	Train approached water tank at uncontrollable speed.
8	.....do	1	3	1,571	Block signal set at clear when block section was not clear.
24	Passenger and freight		2	2,000	Special passenger overtook freight; weather thick, flagman "could not be seen."
25	.....do	1	3	2,000	Misplaced switch.
38	Freight trains			2,000	Improper flagging.
11	.....do			2,072	Flagman failed to go back far enough.
27	.....do			2,033	"Engineman exercised poor judgment."
28	.....do			2,100	Flagman failed to use torpedo.
5	Passenger and freight		2	2,200	Improper flagging.
14	Freight trains			2,200	Fast running and improper flagging.
42	.....do			2,200	Approached yard at uncontrollable speed.
29	.....do	1		2,393	Neglected to flag.
16	.....do			2,400	Flagman failed to go out while his train was switching.
39	.....do			2,600	Engineman failed to keep a good lookout.
34	.....do	1	1	2,800	Engineman (and brakeman) asleep on engine. Fireman did not watch for signal.
35	.....do		2	2,900	Runaway on steep grade.
20	Passenger trains		7	2,400	Failed to flag.
22	.....do		3	2,400	Misplaced switch (at station); switch obscured by steam.
21	.....do		17	2,465	Failed to flag.
9	Freight trains		4	2,500	Do.
30	.....do	3	1	2,900	Fast freight overtook local freight at station in a blizzard.
43	.....do			3,000	Failed to flag.
31	.....do		1	3,100	Flagging neglected, and train approached station too fast.
37	.....do	1	1	3,235	Failed to flag.
41	.....do			3,300	Too high speed; failure to flag.
2	Passenger trains		6	3,500	Neglected 5-minute time interval and also approached station too fast.
17	Freight trains	1	1	3,500	Improper flagging.
32	.....do			3,500	Train approached station too fast; engineman had been on duty 18½ hours.
26	.....do	1	4	3,678	Failure of automatic block signal.
4	First class (not passenger) train and freight.	4	5	3,800	Block signal set at "clear" when block section was not clear.
13	Freight trains	1	2	4,000	Do.
7	.....do			4,300	Too high speed.
10	.....do			4,600	Engineman "claims" did not see flagman.
33	.....do	3	7	5,000	Runaway on steep grade of 37 cars, only 8 air-braked. Crew had been on duty 25 hours; 3 brakemen had had less than 3 months' experience.

Causes of forty-one rear collisions—Continued.

Record number.	Train.	Killed.	Injured.	Damage to cars and engines and road-way.	Cause.
40	Passenger and freight	.....	1	\$5,000	Too high speed; failure to flag; conductor and engineman at fault each had 1 year's experience; flagman 3 months.
23	.....do	2	5	5,500	Freight overtook passenger train which by reason of leaky boiler was losing time and was not protected by flag.
15	A freight and a work train.	2	3	6,000	Conductor of work train overlooked regular train on time table.
1	Passenger trains.....	17	150	9,800	Engineman ran past block signal indicating "stop."
19	Freight trains .....	.....	1	10,900	Conductor neglected to display tail lights and flagman neglected to go back with stop signal.
18	Passenger trains.....	.....	12	13,000	Flagman (at night) failed to go back far enough; thought an approaching train was a yard engine.
43a	Freight trains .....	.....	.....	14,000	Too high speed on descending grade; train of 40 cars, all had air brakes, but only 12 of them were connected up; 3 brakemen had 15 months', 10 months', and 2 months' experience, respectively.
Total, 41 collisions.		43	255	160,247	

As in the list given in the last bulletin, the causes are stated very briefly, yet the statements in most cases give substantially all that is contained in the railroad company's report. The observations made in that bulletin in regard to the incompleteness and insufficiency of the explanations of causes given by the railroad companies will apply with equal force to the present case, though it is true that where the time-interval system is the regulation depended on for the prevention of rear collisions, and where delays to trains consequently necessitate "flagging," the diagnosis of a collision is often much simpler than in the case of butting collisions. "The flagman failed to go back far enough," or "the following engineman failed to properly control the speed of his train," or both of these, figure as principal causes in a great many cases.

It will be obvious that some of the explanations do not bear much relation to the rules which were violated. For example, the fact that a snowstorm was raging does not explain a collision, for the regulations prescribe measures for insuring the safety of trains under such circumstances. It is regrettable to observe that in two of the most costly collisions in this list, one of them causing the death of three trainmen, the failure to use a sufficient number of air brakes appears to have been a principal cause of the disaster. Excessive hours of work also figures in one of these; and again in another and less costly case.

Neither this list nor that of butting collisions, before published, contains anything exceptional. The causes of these costly cases are of the same general character as those of the hundreds of less costly

ones. The \$160,247 charged against these 41 cases is equal to about 42 per cent of the total cost (\$380,948) charged against all of the 385 rear collisions of the quarter; but as far as the question of causes or remedies is concerned, the minor cases are little if any different from the others. And of course the publishing of these tables in this way does not mean that this kind of collisions is prominent in one quarter of the year and that kind in another, except that exceptional fatality attended one or a few cases, as stated, in these particular periods. In number of cases, gross money loss (not including damages for personal injuries), and variety of causes, all the bulletins are pretty much alike, and the list of butting collisions in the last bulletin could, in its essential features, be pretty nearly duplicated in this and in the next, except in the number of casualties to passengers. Reports mentioning men who have been on duty very long hours, or whose experience in train work is less—sometimes much less—than one year, and stating that only a few air brakes were used (where more would have prevented the accident) are as frequent among the great number of cases not cited as in the lists published. In the quarter now reported the seven most costly butting collisions are charged with damage to cars, engines, and roadway, amounting to \$125,758, or nearly \$18,000 each.

The list of "coupling accidents" does not vary greatly from the preceding quarters. The causes of these, in detail, are given in Table No. 3.

TABLE NO. 3.—*Causes of accidents to employees in coupling and uncoupling.*

Sub-class.		Conductors.		Brakemen, etc.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.) preventing quick work.....		1	1	5		
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism).....		2		37		
3	Other causes, apparently due to defective coupler mechanism.....		1		13		
4	Defective draft gear (with automatic coupler).....				1		
5	Coupling to an engine or tender.....				25		1
6	Same (with link and pin coupler).....				2		
7	Coupling on inside of sharp curve.....			1	23		1
8	Foot caught in or between couplers while adjusting coupler.....				21		
9	Slipped (usually on ice or snow).....		1	2	7		
10	Foot caught in frog, guard rail, or switch.....		1	4	10		1
11	Caught by overhanging load (on platform car).....				7		
12	Load shifted.....				3		
13	Engaged in operations preliminary to coupling.....		2	13	32		
14	While coupling safety chains.....			1	16		2
15	Link and pin coupler.....				41		1
16	Link and pin, with automatic.....		1	1	6		
17	Coupling damaged cars (presumably an unavoidable risk).....			1	14		
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism).....		1	3	9		
19	Uncoupling, other causes.....						
20	Miscellaneous.....		11	6	195		6
21	Not clearly explained.....		1	2	50		
Total.....			22	35	517		11

TABLE NO. 4.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Sub-class.	Causes.	Conduc-tors.		Brake-men, etc.		Engine-men.		Firemen.		Other em-ployees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—										
	1 Defect in car.....		1	....	2	....	....	....	....	1	....
	2 Ice or snow.....		3	....	36	....	....	....	....	....	....
	3 Parting of train.....		4	8	22	....	....	....	1	1	....
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	1	8	4	35	....	1	....	2	1	6
	5 While setting brakes.....		3	10	83	....	....	....	....	....	1
	Fell from—										
	6 Coal car.....		....	1	4	....	....	....	....	....	2
	7 Freight car other than box or coal car.....		....	....	2	....	....	....	....	....	....
	8 Engine or tender.....		8	6	74	....	18	2	46	....	1
	9 Passenger car.....		1	....	5	....	....	....	....	....	2
C7	10 Engines, tenders, or cars (all kinds) not in motion.....		1	2	63	....	20	....	36	....	7
	11 Miscellaneous causes.....		40	24	428	....	3	....	13	4	72
	12 Not clearly explained.....	1	8	36	66	....	2	1	2	2	8
	13 Slipped getting on moving trains or cars.....		9	8	102	....	1	....	1	2	9
	14 Jumping off moving trains.....		10	4	84	....	....	....	2	1	9
	15 Jumping from engines or cars anticipat-ing collision, derailment, or other acci-dent.....		2	....	21	....	8	1	14	1	1
	16 Fell from engines or cars by reason of defective handholds and sill steps.....		4	....	45	....	....	....	2	....	....
	17 Getting on or off moving engine.....		20	6	229	....	42	....	44	1	26
	18 Caught in frog, guard rail, or switch.....		....	....	5	....	....	....	....	....	....
	Total.....	2	112	104	1,806	....	95	4	163	14	142

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

ACCIDENT BULLETIN,

No. 4.

APRIL, MAY, AND JUNE, 1902,

AND THE

YEAR ENDING JUNE 30, 1902.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1902.

ACCIDENT BULLETIN,

No. 4,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS,

DURING

APRIL, MAY, AND JUNE, 1902,

WITH

TABLES FOR THE YEAR ENDING JUNE 30, 1902.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1902.

THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN NO. 4.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING JUNE 30, 1902.

The number of persons killed in train accidents during the months of April, May, and June, 1902, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 140, and of injured 1,810. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 10,136 (616 killed and 9,520 injured). These accidents are classified in the following table. These reports deal only with (a) passengers, and (b) employees on duty:

TABLE NO. 1.—*Casualties to persons, April, May, and June, 1902.*

	Passen- gers.		Trainmen.		Other per- sons em- ployed on or around trains.		Switch- men, flagmen, and watch- men.		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	13	379	61	439	1	57	0	7	4	33	66	536
Derailments.....	5	335	42	278	3	48	0	3	0	21	45	350
Miscellaneous train accidents (ex- cluding the above), including locomotive-boiler explosions....	0	47	9	150	0	2	0	1	2	10	11	163
Total train accidents.....	18	761	112	867	4	107	0	11	6	64	122	1,049
Coupling or uncoupling cars.....	0	0	33	450	1	5	6	48	0	9	40	512
While doing other work about trains or while attending switches.....	0	0	11	672	0	55	4	28	4	65	19	820
Coming in contact with overhead bridges, structures at side of tracks, etc.....	2	9	27	186	0	2	2	4	0	7	29	199
Falling from cars or engines or while getting on or off.....	26	272	86	1,308	8	48	5	85	22	167	121	1,608
Other causes.....	9	279	50	1,149	11	100	28	92	141	2,670	230	4,011
Total (other than train acci- dents).....	37	560	207	3,765	20	210	45	257	167	2,918	439	7,150
Total, all classes.....	55	1,321	319	4,632	24	317	45	268	173	2,982	561	8,199

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident, are not reported. The items in the column headed "Switchmen, flagmen, and watchmen," include switch tenders (not acting as brakemen), lever men, and lamp men; track, bridge, and crossing watchmen, and policemen.

The number of passengers reported killed in collisions and derailments shows a gratifying decrease as compared with the records given in the first, second, and third bulletins.

The butting collision numbered 18, in the detail list below (the twenty-first item) resulted in the death of four passengers. The number of employees killed in train accidents is also much smaller than in either of the three quarters preceding.

The total number of collisions and derailments was 2,010 (1,094 collisions and 916 derailments), of which 157 collisions and 101 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$1,813,833, namely: April, \$624,536; May, \$595,395; June, \$593,902. Given more in detail, these facts appear as below:

TABLE No. 2.—*April, May, and June, 1902.*

	Number.	Loss.
Collisions due to trains separating.....	192	\$128, 892
Other collisions.....	902	773, 455
Total collisions	1, 094	902, 347
Derailments due to defects of roadway, etc.....	142	120, 739
Derailments due to defects of equipment.....	412	371, 997
Derailments due to negligence of trainmen, signalmen, etc.....	57	30, 750
Derailments due to unforeseen obstruction, etc.....	64	153, 659
Derailments due to malicious obstruction of tracks, etc.....	12	13, 405
Derailments due to other causes.....	229	220, 936
Total.....	916	911, 486
Total collisions and derailments.....	2, 010	1, 813, 833

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not included.

It will be observed that the average loss by each collision was approximately \$824, and by each derailment approximately \$995.

In preceding bulletins tables have been given showing in some detail the causes of the more serious collisions, butting collisions being thus emphasized in Bulletin No. 2, and rear collisions in No. 3. In each table the importance of the accident was measured by the reported financial loss; and the limit, except for a few items, was \$2,000, none smaller than that being included in the list. In the present bulletin there is shown (page 5) a similar list, in which are given collisions of all classes, including "miscellaneous;" and to offset the enlargement of the list, due to the inclusion of three classes instead of one, the minimum cost limit is raised from \$2,000 to \$5,000. The number of cases is 26, including six involving losses of less than \$5,000 each. In "Miscellaneous" are included those cases which are due to the breakage or other failure of a coupling followed by a collision of the separated parts of the train.

Causes of twenty-six most costly collisions (all classes included).

[NOTE.—R. stands for rear collision; B., butting collision; M., miscellaneous; P., passenger train
F., freight and miscellaneous trains.]

Item.	Record number.	Class.	Kind of train.	Killed.	Injured.	Damage to cars, engines, and roadway.	Cause.
1	25	R.	F. and F....	2	1	\$400	Engineman failed to properly control speed; had been on duty 22 hours, with 5 hours' rest within that time.
2	26	B.	F. and F....	0	0	1,200	Conductor misread order; engineman took his word for it. Experience of conductor, 46 days; of engineman, 16 days.
3	10	R.	F. and F....	2	6	2,100	Freight approached station at uncontrollable speed in dense fog; the persons killed were passengers in the train standing at the station.
4	7	R.	F. and F....	0	0	2,868	Engineman fell asleep approaching station; had been on duty 7 hours, succeeding a period of 20 hours' rest.
5	11	R.	F. and F....	0	0	4,200	Engineman miscalculated distance necessary in which to stop his train; on duty 7 hours and 30 minutes, following 3 hours' rest following 21 hours on duty.
6	24	B.	P. and F....	2	34	4,800	Inferior train encroached on time of superior; conductor and engineman, both with fairly good records, deliberately "took chances" of using about 5 minutes of superior train's time.
7	2	B.	P. and P....	0	8	5,000	Misplaced switch; and engineman failed to keep vigilant lookout.
8	6	R.	F. and F...	0	1	5,000	Approached station too fast; damage due largely to fire.
9	8	B.	P. and F...	2	14	5,200	Conductor and engineman of freight "took chances" on reaching a certain station before passenger train left there.
10	19	B.	F. and F...	0	2	5,400	Error of train dispatcher; a man of 16 years' experience; had been on duty 5 hours.
11	1	R.	F. and F...	0	3	5,800	Failure of air pump; too high speed in view of imperfect condition of air brakes. Conductor of foremost train knew that by reason of this his train was in special danger of being run into at the rear, yet did not apprise his flagman of the fact.
12	4	B.	F. and F...	0	0	5,815	1 train ran past meeting point.
13	22	B.	P. and F...	1	6	5,859	Conductor and engineman of work train, in reading time-table, overlooked passenger train.
14	3	B.	F. and F...	0	5	7,000	Train left station without orders while train-order signal was against it.
15	21	M.	.....	2	2	7,500	Freight train, at night, collided with cars which had run out from a side track. These cars had been placed on side track by a man of 1 day's experience, he having been intrusted with this duty by a foreman of 3 months' experience.
16	12	B.	P. and F...	2	17	8,000	On 4-track railroad. Eastbound freight using cross-over sent out man to flag westbound trains on two tracks, but he flagged only one.
17	20	R.	F. and F...	1	3	8,000	Engineman approached station too fast; claimed air-brake pipe leading to cars had been closed; but there are indications that the real cause was that he slept on his engine; his past record as an engineman was not good.
18	23	B.	F. and F....	0	0	8,000	Conductor and engineman overlooked orders which had been given to them.
19	9	R.	F. and F....	0	0	8,800	Engineman failed to notice flag.
20	14	B.	F. and F....	0	9	9,000	1 engineman, running without train, overlooked an order; conductor tried to signal him to stop, but did not do so soon enough.
21	15	B.	P. and F....	5	4	9,300	Conductor of passenger train misinterpreted order, and engineman apparently took conductor's interpretation. Four passengers killed. Operator wrongfully delivered a clearance card.
22	18	B.	F. and F....	1	3	9,800	Block signalman gave clear signal when the block section was not clear.
23	5	M.	P. and F....	0	1	12,850	Freight train ran into passenger train of another road at right-angle crossing. No fixed signals at crossing. Conflicting testimony as to which train was most blameworthy.

Causes of twenty-six most costly collisions (all classes included)—Continued.

Item.	Record number.	Class.	Kind of train.	Killed.	Injured.	Damage to cars, engines, and roadway.	Cause.
24	17	B.	P. and P....	4	27	\$18,700	Conductor and engineman of 1 train overlooked orders which had been delivered to them.
25	16	B.	P. and P....	6	37	31,000	West-bound train was standing on side track (2 a. m.), and there is no explanation except that the switch had been left misplaced, though after the collision it was found set straight.
26	13	R.	P. and F....	0	4	37,000	Men in charge of a freight waiting on a side track for 3 passenger trains, started out after 2 of them had passed, and their train was run into at the rear by the third passenger train. Most of the wreck was destroyed by fire.
Total .				30	187	\$228,597	

The explanations, it will be seen, are very similar to those given in the two lists previously published. Most of them illustrate the same general features, though there are many details which differ sufficiently to repay careful perusal. The aggregation of a large number of costly and fatal cases within the same length of time is the salient feature in which this list differs from the preceding ones. As before, some of the explanations are inadequate. It is noticeable that in two cases, both on very prominent railroads, a conductor and an engineman are reported as having deliberately "taken chances." Accidents in which the responsibility rests on men of very limited experience again appear among these costly cases, and there is one case in which an engineman had been on duty twenty-two hours. One engineman who fell asleep on his engine had been on duty only seven hours, so that on the face of the report there can be no fault found with his working hours; but it is a fair question whether very long working hours, combined with the irregularity which often is inseparable from the freight-train service, do not introduce a serious element of danger by leading to, if not encouraging, the taking of rest at times when the duty is to keep awake. Thus, a freight-train run of 175 miles may be scheduled at fifteen hours, with eighteen to twenty-four hours' rest between runs, but on so long a run the chances of delay are, of course, greater than on a shorter one; and even when there is no lengthening of the working hours by delays on the road the irregularity of hours is constant. The resting hours as well as the working hours are too long, and the lengthening of the time "off" to a period longer than is required for rest (while yet it is not long enough for two natural rest periods) does not remove the objection to excessive working hours.

The causes of "coupling accidents" are classified in Table No. 3. Of the 552 persons represented in this table as killed or injured, 37 are reported as having had less than one year's experience. Of the 7,589 persons killed or injured in accidents of all kinds except train accidents, 276 had had less than one year's experience.

TABLE No. 3.—*Causes of accidents to employees in coupling and uncoupling.*

Sub-class.		Conductors.		Brakemen, etc.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.) preventing quick work				20		
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism)				45		
3	Other causes, apparently due to defective coupler and mechanism				7		
4	Defective draft gear (with automatic coupler)				3		
5	Coupling to an engine or tender			1	20		
6	Same (with link-and-pin coupler)				3		
7	Coupling on inside of sharp curve		1	1	28		
8	Foot caught in or between couplers while adjusting coupler		1	1	27		
9	Slipped (usually on ice or snow)				6		
10	Foot caught in frog, guard rail, or switch	1		5	5		
11	Caught by overhanging load (on platform car)				4		
12	Load shifted				3		
13	Engaged in operations preliminary to coupling		1	10	49		
14	While coupling safety chains		1		8		1
15	Link-and-pin coupler		1	1	23		
16	Link and pin, with automatic				10		
17	Coupling damaged cars (presumably an unavoidable risk)	1		1	15		
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism)			2	18		
19	Uncoupling, other causes						
20	Miscellaneous		3	10	145		8
21	Not clearly explained		3	6	53		
	Total	2	11	38	492		9

TABLE No. 4.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Conductors.		Brakemen, etc.		Enginemen.		Firemen.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—										
	1 Defect in car				6						
	2 Ice or snow				1						
	3 Parting of train			6	29						1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.		4	2	24					1	2
	5 While setting brakes		1	6	63						2
	Fell from—										
	6 Coal car				6						2
	7 Freight car other than box or coal car.		1	1	6						1
	8 Engine or tender	1	2	6	44		5	4	29		7
	9 Passenger car				2						1
	10 Engines, tenders, or cars (all kinds) not in motion		4	1	67		17		35		11
C7	11 Miscellaneous causes	8	30	16	329				1	7	62
	12 Not clearly explained		1	27	85				8	4	13
	13 Slipped getting on moving trains or cars.	2	15	10	129				1	2	17
	14 Jumping off moving trains		13	3	146					7	27
	15 Jumping from engines or cars anticipating collision, derailment, or other accident		4		19		2		11		3
	16 Fell from engines or cars by reason of defective hand holds and sill steps		5	1	36				1		2
	17 Getting on or off moving engine	1	14	6	197	2	17	1	29	1	16
	18 Caught in frog, guard rail, or switch				2						
	Total	7	94	85	1191	2	41	5	115	22	167

YEARLY TABLES.

This bulletin completes the publication of the accident records under the law of March 3, 1901, for one year, and the following table (A) gives the aggregate for twelve months of the items which are given in Table No. 1. The total number of casualties shown in Table A is 42,619 (2,819 killed and 39,800 injured):

TABLE A.—*Summary of casualties to persons, year ending June 30, 1902.*

	Passengers.		Trainmen.		Other persons employed on or around trains.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	130	2,298	366	2,456	19	265
Derailments	37	1,194	193	1,040	23	205
Miscellaneous train accidents (excluding the above), including locomotive boiler explosions		94	37	538	.....	12
Total train accidents.....	167	3,586	596	4,034	42	482
Coupling or uncoupling cars.....			120	1,816	4	34
While doing other work about trains or while attending switches.....		1	52	2,880	6	175
Coming in contact with overhead bridges, structures at side of tracks, etc.....	7	38	96	958	1	15
Falling from cars or engines, or while getting on or off.....	99	1,250	408	5,654	29	192
Other causes	30	1,214	235	4,560	39	404
Total (other than train accidents).....	136	2,503	911	15,868	79	820
Total all classes.....	303	6,089	1,507	19,902	121	1,302

	Switchmen, flagmen, watchmen.		Other employees.		Total employees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	6	44	34	300	425	3,065
Derailments		17	13	118	229	1,380
Miscellaneous train accidents (excluding the above), including locomotive boiler explosions		12	6	39	43	601
Total train accidents	6	73	53	457	697	5,046
Coupling or uncoupling cars	18	230	1	33	143	2,113
While doing other work about trains, or while attending switches	11	185	14	326	83	3,566
Coming in contact with overhead bridges, structures at side of tracks, etc.....	2	63	5	34	104	1,070
Falling from cars or engines, or while getting on or off.....	33	367	67	654	537	6,867
Other causes	117	444	561	9,641	952	15,049
Total (other than train accidents).....	181	1,289	648	10,688	1,819	28,665
Total all classes.....	187	1,362	701	11,145	2,516	33,711

Comparisons of the principal totals with those for the two years preceding and with 1893 (years ending June 30) may be made from the following table, the figures for 1901, 1900, and 1893 being taken from the statistician's tables, made up from the railroad companies' annual reports. It is to be borne in mind that the number of men employed

by the railroads has been constantly increasing. It is much larger in 1902 than in 1893; but precise figures for the later year have not yet been compiled.

TABLE B.

	1902.		1901.		1900.		1893.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers in train accidents	167	3,586	110	2,338	93	1,999	100	1,703
Other causes	136	2,503	172	2,650	156	2,129	199	1,526
Total	303	6,089	282	4,988	249	4,128	299	3,229
Employees in train accidents	697	5,046	586	3,773	539	3,288	525	3,008
In coupling accidents...	143	2,113	198	2,768	282	5,229	433	11,277
Overhead obstructions, etc. ^a	104	1,070	56	509	56	436	73	444
Falling from cars, etc...	587	6,867	599	6,371	529	4,425	644	3,780
Other causes ^b	1,035	18,615	1,236	27,721	1,144	26,265	1,052	13,220
Total	2,516	33,711	2,675	41,142	2,550	39,643	2,727	31,729
Total passengers and employees	2,819	39,800	2,957	46,130	2,799	43,771	3,026	34,958

^a In 1902 this item includes fixed obstructions at the side of the track as well as overhead.

^b The diminution in the number of employees killed and injured by miscellaneous causes in 1902, as compared with 1901, is due, partly or wholly, to the inclusion in 1901 of employees in shops and on boats, wharves, and other places remote from the railroad, which are not included in the accident bulletins.

A comparison of the coupling accidents recorded in the foregoing table for 1902, with the same for 1893 shows the remarkable and gratifying results of the safety-appliance act of 1893, which requires the use of automatic couplers and which went into full effect on August 1, 1900. The number of employees killed shows a diminution of *sixty-eight per cent*, and this notwithstanding the fact that there is now engaged in this work a much larger number of men than in 1893. The diminution in the number injured is still greater, being no less than 81 per cent.

The following tables, C, D, and E, show, respectively, for the twelve months ending June 30, 1902, the facts which appear in Tables 2, 3, and 4 of the quarterly returns.

TABLE C.—*Collisions and derailments; damage to cars, engines, and roadway.*

	Number.	Loss.
Collisions due to trains separating	774	\$391,489
Other collisions	4,268	3,894,194
Total	5,042	4,285,683
Derailments due to defects of roadway, etc.	547	443,706
Derailments due to defects of equipment	1,609	1,295,299
Derailments due to negligence of trainmen, signalmen, etc.	255	136,241
Derailments due to unforeseen obstructions, etc.	239	546,478
Derailments due to malicious obstruction of track, etc.	57	63,246
Derailments due to other causes	926	874,753
Total	3,633	3,359,723
Total collisions and derailments	8,675	7,645,406

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers, trainmen, and other persons killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the most serious collisions in that quarter, 57 passengers having been killed. There are notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties (4 killed, 126 injured) due to operating trains in which air brakes were used on only a portion of the cars, and the danger of running trains partially air braked is commented on.

Bulletin No. 2 contains a detailed list showing the cost and causes of the 27 most serious butting collisions in that quarter. In these collisions 70 persons were killed and 234 were injured, and the damage to cars, engines, and roadway amounted to \$306,511. The incompleteness of the statements of causes, as sent in by the railroads, is commented on.

Bulletin No. 3 contains a list similar to that just mentioned, but showing rear instead of butting collisions. As in the first list, only the most serious accidents are considered; and of these there were 41, costing \$160,247. The number of persons killed was 43, and of injured 255.

Bulletin No. 4 contains a third list of collisions, this one including all classes; but it includes only a few in which the damage was less than \$5,000. The totals of this list are, killed 30, injured 187, cost \$228,597. Collisions occurring when the trainmen had worked very long hours are commented on. In this bulletin a table is given showing the deaths and injuries due to trains parting. The aggregate of damage shown in this table is \$492,781; persons killed 14, injured 386. The table shows that nearly all of the coupler failures which resulted in collision or derailmen were reported as due to "cause unknown."

ACCIDENT BULLETIN,

No. 5,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND


CASUALTIES TO PERSONS,

DURING

JULY, AUGUST, AND SEPTEMBER, 1902.

U. S. INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1903.



THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 5.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING SEPTEMBER 30, 1902.

The number of persons killed in train accidents during the months of July, August, and September, 1902, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 263, and of injured 2,613. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 12,007 (845 killed and 11,162 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE No. 1.—Summary of casualties to persons, July, August, and September, 1902.

	Passen- gers.		Trainmen.		Other persons employed on or around trains.		Switch- men, flagmen, and watch- men.		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	12	757	108	601	14	85	3	13	11	83	136	782
Derailements	29	447	53	328	5	43	0	5	5	37	63	413
Miscellaneous train accidents (ex- cluding the above), including locomotive boiler explosions	0	25	22	178	0	3	0	2	1	6	23	189
Total train accidents	41	1,229	183	1,107	19	131	3	20	17	126	222	1,384
Coupling or uncoupling cars.....	0	0	42	517	1	6	7	55	2	6	52	584
While doing other work about trains or while attending switches	0	0	25	986	3	43	0	55	4	151	32	1,235
Coming in contact with overhead bridges, structures at side of tracks, etc	2	19	24	209	0	5	1	13	2	6	27	233
Falling from cars or engines, or while getting on or off.....	29	359	113	1,461	6	36	8	105	34	163	161	1,765
Other causes	7	362	81	1,147	6	83	29	79	156	2,683	272	3,992
Total (other than train acci- dents)	38	740	285	4,320	16	173	45	307	198	3,009	544	7,809
Total, all classes	79	1,969	468	5,427	35	304	48	327	215	3,135	766	9,193

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident, are not reported. The items in the column headed "Switchmen, flagmen, and watchmen," include switch tenders (not acting as brakemen), lever men, and lamp men; track, bridge, and crossing watchmen, and policemen.

THE INTERSTATE COMMERCE COMMISSION.

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EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 5.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING SEPTEMBER 30, 1902.

The number of persons killed in train accidents during the months of July, August, and September, 1902, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 263, and of injured 2,613. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 12,007 (845 killed and 11,162 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE No. 1.—Summary of casualties to persons, July, August, and September, 1902.

	Passen- gers.		Trainmen.		Other persons employed on or around trains.		Switch- men, flagmen, and watch- men.		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	12	757	108	601	14	85	3	13	11	83	136	782
Derailements	29	447	53	328	5	43	0	5	5	37	63	413
Miscellaneous train accidents (ex- cluding the above), including locomotive boiler explosions	0	25	22	178	0	3	0	2	1	6	23	189
Total train accidents	41	1,229	183	1,107	19	131	3	20	17	126	222	1,384
Coupling or uncoupling cars.....	0	0	42	517	1	6	7	55	2	6	52	584
While doing other work about trains or while attending switches	0	0	25	986	3	43	0	55	4	151	32	1,235
Coming in contact with overhead bridges, structures at side of tracks, etc	2	19	24	209	0	5	1	13	2	6	27	233
Falling from cars or engines, or while getting on or off.....	29	359	113	1,461	6	36	8	105	34	163	161	1,766
Other causes	7	362	81	1,147	6	83	29	79	156	2,683	272	3,992
Total (other than train acci- dents)	38	740	285	4,320	16	173	45	307	198	3,009	544	7,809
Total, all classes	79	1,969	468	5,427	35	304	48	327	215	3,135	766	9,193

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident, are not reported. The items in the column headed "Switchmen, flagmen, and watchmen," include switch tenders (not acting as brakemen), lever men, and lamp men; track, bridge, and crossing watchmen, and policemen.

Many items in the foregoing table show a marked increase over the same items in the last preceding bulletin, and many, also, are larger than in the same quarter of the preceding year—the quarter reported in Accident Bulletin No. 1. The present record includes a derailment in which 21 passengers were killed, and a collision of work trains in which 13 employees were killed (these accidents are more particularly referred to in connection with a table which appears on another page); but, except in connection with these two items, there is no apparent reason for an increase in the totals, other than the well-known fact that during the three months now under consideration the traffic of a large majority of the railroads has been heavier than ever before. It is a matter of common observation that new men have been engaged for service in train and yard work in larger proportionate numbers than for many years before. Evidence tending to confirm this may be found in the list of coupling accidents given in detail on a following page, where, among those killed, 6 had had less than one year's experience (3 of them one month or less), and where 23 of the injured were thus classed, 7 of these having worked less than five weeks. Similar notes of short terms of service occur in the other classes of injuries.

The total number of collisions and derailments was 2,448 (1,434 collisions and 1,014 derailments), of which 51 collisions and 92 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,189,512, namely: July, \$716,164; August, \$757,663; September, \$715,685. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Number.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	386	\$349,305	39	471
Collisions, butting.....	251	437,772	66	616
Collisions, trains separating.....	691	836,956	34	263
Collisions, miscellaneous.....	106	126,595	9	196
Total collisions.....	1,434	1,250,628	148	1,539
Derailments due to defects of roadway, etc.....	155	133,185	12	181
Derailments due to defects of equipment.....	420	356,655	7	113
Derailments due to negligence of trainmen, signalmen, etc.....	75	62,110	8	41
Derailments due to accidental causes.....	86	80,852	24	167
Derailments due to malicious obstruction of tracks, etc.....	20	28,215	4	45
Derailments due to miscellaneous causes.....	258	277,867	37	313
Total.....	1,014	938,884	92	860
Total collisions and derailments.....	2,448	2,189,512	240	2,399

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

Following the same style employed in setting forth some of the collisions in bulletins 2, 3, and 4, a table is given below of the most disastrous train accidents occurring in the quarter now under review.

In this table are included not only collisions of all classes, but derailments as well. The number of collisions and derailments in which passengers were killed, or in consequence of which the damage to cars, engines, and the roadway exceeded \$5,000, was 69. Of these, one-third (15 collisions and 8 derailments) are briefly described in the table, the table being brought within readable compass by excluding all of the cases in which no passenger was killed, and in which the cost is reported at less than \$10,000. Besides the 23 cases tabulated, there were, among the 69 accidents, 5 collisions due to errors of train dispatchers or dispatchers' assistants; damage, \$28,155; killed, 3; injured, 15; 3 derailments in consequence of malicious misplacement of switches or other mischief; damage, \$22,500; killed, 3; injured, 16; and one collision of freight trains due to careless conduct of men who slept on duty. In this last-named case a freight train was sidetracked to wait for another train, and the whole of the crew, having been on duty twenty-four hours, fell asleep. On awakening, these men thought, or assumed, that the two trains which they were expecting had passed them, when, in fact, one of the two was yet to come. In one collision, due apparently to a train breaking in two, a brakeman was killed whose age was reported at only 18 years.

The most disastrous accident of the quarter was the derailment, which appears in the list as No. 69, item f, causing the death of 21 passengers. This was an excursion train, and the cause of the derailment is reported as undiscoverable. The published reports of this accident state that all of the passengers killed were riding on the platforms of the cars. The 13 persons killed in the collision numbered 19, item d, were workmen on gravel trains. This collision appears to have been due to a suspension of block-signal rules, and the circumstances indicate laxity in the maintenance of proper safeguards. Number 9, item w (collision), indicates the absence or nonuse of a safety switch to prevent the escape, at the lower end of a switching yard, of cars which elude the control of the brakeman. Number 17, item u, represents the derailment of a train which was running at a very high speed. The engine, cars, and track were in the best condition, so far as could be known. The train was scheduled to run very fast for over 100 miles, and there is no explanation of the disaster, except that the speed was excessive. The engineman who was running the engine was killed in the wreck, as was the fireman also. In most of the other cases among the 23 tabulated, the cause is explained more or less clearly in the table itself. Besides item f, one other derailment is reported as due to "cause unknown;" and the forgetting of telegraphic orders, by the men who had the orders in their pockets or immediately before their eyes, accounts for four collisions, averaging over \$17,000 each.

Finally, accident No. 50, item m, a collision where the block system was in force, is remarkable as showing negligence on the part of four men. This negligence neutralized the safeguards of the block system; though it is to be observed that the starting of trains from a side track where the outlet switch is situated in advance of the starting signal is a modification of the system which is not approved by the best authorities. In this collision train A, running southward from H to P, was followed closely by train B, the latter being authorized to occupy the same block section with the leading train, under orders to run with speed under full control. The signalman at H told P to hold northbound trains for southbound train B, and claims that P answered "O. K." It does not appear, however, that the "O. K." was recorded; and according to the rule it should have been given in full—"O. K.; I will hold the block for train B." The signalman at P said once that he received no such order from H; at another time he claimed that he thought train A was behind train B. When the northbound train was ready to start, the signalman at P told the conductor and engine-man that they could go as soon as train A arrived. The conductor and engineman acted on this oral statement, without waiting for the block signal to be cleared, their train being north of the block signal station, on a side track. Trains C and B collided, but each engine-man had full view of the opposing train for half a mile, and the man on train C saw the other train, stopped, and sounded his whistle; but the southbound engineman appears to have been entirely oblivious of the northbound train until his engine struck it.

Causes of twenty-three most serious train accidents.

[NOTE.—R. stands for rear collision; B., butting collision; M., miscellaneous; D., derailment; P., passenger train; F., freight and miscellaneous trains.]

Item.	Record No.	Class.	Kind of train.	Killed.	Injured.	Damage to cars, engines, and roadway.	Cause.
a	11	D.	P	3	30	\$755	Loose wheel and spreading of track.
b	42	R.	P. and F....	5	1	800	Passenger train ran into rear of freight train in fog; persons killed (drivers) were in caboose of freight train. Engineman (of 15 years' experience) at fault for not controlling speed.
c	37	D.	P	4	17	2,500	Cyclone separated cars from locomotive and forced them off the track.
d	19	B.	Two work trains.	13	17	3,700	Conductor trusted another conductor to hold all trains and prevent their entering specified section of track, but this instruction or request was not correctly understood.
e	43	R.	F. and F....	2	23	4,485	Freight train approached station too fast.
f	69	D.	P	23	96	8,189	Cause undiscovered; cars, engine, and track free from evidence of defect; speed 35 miles an hour; 5-degree curve.
g	16	D.	F	0	3	10,000	Runaway; damage mostly from fire.
h	15	D.	F	0	2	10,700	Runaway; cars broke loose from train and became uncontrollable on steep grade.
i	20	M.	P and F	0	2	10,900	Fireman ran engine out from side track without first sending a flagman to protect the movement; conductor and engineman apparently cognizant of his action.

Causes of twenty-three most serious train accidents—Continued.

Item.	Record No.	Class.	Kind of train.	Killed.	Injured.	Damage to cars, engines, and roadway.	Cause.
j	5	B.	F and F	1	5	\$11,148	Telegraph operator received message reading "11.55;" copied it "11.05," but in repeating, wrote "11.55." Operator's experience, two years.
k	46	B.	P and F	3	2	11,200	Freight train (engine detached) left standing on grade with brakes not set; escaped control.
l	56	M.	P and P	2	4	11,800	Inferior train started from station without orders when, according to rule, orders should have been asked for. Conductor's experience, one month; engine-man's, one year. Both forgot that the other train was soon due.
m	50	B.	F and F	4	4	12,000	Mistake of block-signal operators; also engineman (running under permissive signal) neglected to keep good lookout.
n	32	R.	F. and F....	1	1	14,000	Train passed block signal indicating stop; also flagman of forward train failed to protect his train by flag.
o	2	B.	P. and P....	1	69	14,000	Both engineman and conductor of one of the trains forgot a telegraphic order.
p	6	B.	F. and F....	3	2	14,918	Meeting order forgotten by both conductor and engineman.
q	26	B.	F. and F....	1	4	16,000	Engineman forgot meeting order; conductor evidently forgot also. Collision occurred only 8 minutes after the order had been delivered.
r	35	R.	P. and P....	2	2	17,000	Engineman approaching station neglected to properly regulate the speed.
s	64	D.	P	2	10	17,000	Passenger train running at about 60 miles an hour ran past misplaced switch and was derailed by entering side track too fast; red (danger) light on the misplaced switch was visible one-half mile away. Switch left in wrong position by freight conductor after he had used it a short time before. Engineman at fault (who was killed), sounded whistle a few seconds before, which indicates that he was not asleep. Had 9 hours rest before going on duty.
t	18	D.	P	1	33	18,500	Unknown.
u	17	D.	P	2	4	23,300	Excessive speed: (estimated 66 miles an hour) on curve of 7° 7'; outer rail elevated 7½ inches.
v	21	D.	F. and F....	4	0	25,000	Conductor and engineman forgot a meeting order.
w	9	M.	Passenger train and runaway freight cars.	4	25	50,500	Freight cars escaped control while being switched in yard, due principally to failure of brake chain; loss largely due to fire caused or spread by illuminating gas.
Total .				81	356	308,395	

The next table, No. 3, coupling accidents, given in its usual form, is supplemented by a list showing in brief language the cause of each one of the coupling accidents of the quarter.

TABLE No. 3.—*Causes of accidents to employees in coupling and uncoupling.*

Sub-class.		Conductors.		Brakemen, etc.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.) preventing quick work.....				16		
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism).....		3		54		
3	Other causes, apparently due to defective coupler and mechanism.....				17		
4	Defective draft gear (with automatic coupler).....				6		
5	Coupling to an engine or tender.....			1	11		
6	Same (with link-and-pin coupler).....				6		
7	Coupling on inside of sharp curve.....			2	26		
8	Foot caught in or between couplers while adjusting coupler.....				35		
9	Slipped (usually on ice or snow).....			1	15		
10	Foot caught in frog, guard rail, or switch.....	1		3	8		
11	Caught by overhanging load (on platform car).....		1	1	5		
12	Load shifted.....				2		
13	Engaged in operations preliminary to coupling.....		3	14	70	2	
14	While coupling safety chains.....		1	3	11		
15	Link-and-pin coupler.....			1	18		
16	Link and pin, with automatic.....				3		
17	Coupling damaged cars (presumably an unavoidable risk).....				12		
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism).....		3	2	19		
19	Uncoupling, other causes.....						
20	Miscellaneous.....		8	10	166		6
21	Not clearly explained.....		2	11	57		
	Total.....	1	21	49	557	2	6

The reader who has examined Table No. 3 in the bulletins that have been issued will have observed that "operations preliminary to coupling" is a class in which appears a considerable percentage of the deaths each quarter; and also that a considerable share of the accidents are due to defective uncoupling mechanism and to the fact that engines and tenders are not in all cases equipped with automatic couplers. With a view to showing the extent to which these conditions prevail, as well as to give the clearest practicable exhibit of the situation generally, the coupling accidents of the quarter under review are shown in detail in the following table. This subject is also discussed at some length in the sixteenth annual report of the Commission (December, 1902).

List of employees reported as killed in coupling or uncoupling cars.

JULY, 1902.

Record No.	Circumstances and cause.	Daylight (D.) or darkness (N.).	Age.	Experience if less than 1 year.
18	Between cars, adjusting knuckles	D.	27	5 months.
24	.....do.....	D.	29
30	Stepped between cars to open knuckle; caught between draw-bars and deadwood.	N.	40	
52	Uncoupling, fell off engine tank; run over.....	N.	22	
68	Caught between couplers.....	D.	26	
70	Caught between bumpers.....	N.	22	
78	Coupling presumably; run over	D.	25	
88	Walking alongside of train preparatory to coupling, caught between car and post of platform.	D.	23	
93	Arranging the knuckle; head caught between buffers	D.	23	
96	Stepped between cars to open knuckle; caught between extension ends of cars.	D.	28	
110	Adjusting knuckle; caught between two cars.....	D.	38	
120	Caught between cars while coupling.....	N.	23	
132	Caught between bad order cars, chain coupling.....	D.	38	
164	Caught between cars while coupling	D.	40	
166	Wheel passed over leg	D.	25	
176	On curve; kicked coupler over with foot	D.	24	
177	Trying to uncouple cars while in motion; foot caught by wheel..	N.	27	
374	Train in motion, stepped in to adjust drawbar	N.	.....
180	Went to make coupling when train broke apart; wheel caught foot.	D.	
694	Cutting off cars; caught foot in frog	D.	

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3	Went between cars to uncouple safety chains; slack ran out	D.	32	1 week. 9 months.
5	Between cars fixing coupler; cars came together, catching him.	D.	34	
17	Head caught between drawheads while coupling	N.	.....
27	Coupling missed; went in to open couplers; caught between cars.	N.	27	
32	Supposed to have been between cars coupling when train set back.	N.	23	1 month.
75	Failed to uncouple cars and jumped out from between cars, and was caught between car and platform.	N.	25	
123	Trying to adjust knuckle; caught between couplers.....	D.	28	
140	Couplers failed to work, and car was knocked away about 20 feet; while fixing coupler car ran back and caught him.	D.	.....
156	Caught between cars while coupling same.....	D.	23	
181	Reached in between cars for pin; chain missing, caught foot in frog.	N.	42	
185	Went between engine and car to uncouple; caught between buffers.	N.	48	
209	Went between cars to adjust knuckles; caught between drawheads.	N.	27	
210	Train parted; went between to couple; train ran over him.....	N.	26	
215	Trying to open knuckle; fell between cars.....	D.	.....
220	Coupling engine to log car, using link on account of engine being higher than log car, caught between car and engine.	D.	

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4	Walking alongside train lifting lever, foot caught in frog.....	D.	25	5 months.
18	Lever disconnected, stepped in; caught foot in guard rail.....	N.	30	
54	Cutting off cars, caught foot in split switch	D.	47	
74	Went between cars; head caught.....	D.	43	
106	Extending log caught neck between car and engine.....	D.	25	
110	Cutting car loose, fell off end of flat car; car passed over him ...	D.	19	1 month.
121	Adjusting couplers; caught between buffers.....	D.	35	
124	Caught between cars while chaining them.....	D.	30	
133	Attempted to pass between drawbars	N.	30	
146	Sharp curve, couplers passed each other, catching him.....	D.	24	
186	Caught between cars.....	D.	21	
192	Caught between buffers.....	D.	24	
202	Operating rod out of repair, went between cars; foot caught in frog	N.	30	
212	Placing knuckle pin on drawbar, engine moved against him....	D.	50	
554	Attempted to uncouple; fell between cars.....	D.	35	

List of injuries to employees reported as occurring in coupling or uncoupling cars—Cont'd.

JULY, 1902—Continued.

1.	2.	3.	4.	5.	6.
Record No.	Injury.	Cause as reported.	Daylight (D.) or darkness (N.).	Age.	(See note.)
114	Foot mashed	Pushing drawhead over with foot.....	N.	23	
115	Finger mashed	Coupling; arm caught when cars came together.	D.	30	
116	Leg squeezed.....	Caught between coupling lever and tank of engine.	D.	26	
117	Finger broken.....	Caught between lock-pin lever and buffer.	D.	21	
118	Finger crushed.....	Locking pin came out.....	D.	24	
119	Body crushed	Coupling with pilot bar, when same flew out.	D.	21	
120	Foot bruised	Shoving drawhead over with foot; slipped	D.	31	S.
121	Compound fracture of arm.	Struck on side of head; dazed; put arm on rail; run over.	D.	21	
122	Thumb burst open ...	Coupling; caught hand between pin and knuckle.	N.	25	S.
123	Foot sprained	Closing knuckle; stepped in frog	D.	23	S.
124	Elbow bruised.....	Uncoupling; slipped	D.	38	S.
125	Fingers mashed	Coupling; caught between lever and end of car.	D.	26	
126	Finger injured	Coupling; caught between couplers	N.	27	
127	Hand injured	Pushing buffer back with stick; slipped..	N.	23	
128	Finger crushed.....	Caught between cars while coupling.....	D.	22	8 months.
129	Hand injured	Caught between vestibule of car and knuckle while coupling.	D.	30	
131	.....do	Raised pin by chain; caught between pin and end sill of car.	N.	29	S.
133	Thumb injured.....	Uncoupling bad-order cars in motion; cars coupled with chain.	N.	25	S.
134	Fingers injured	Uncoupling lever disconnected; pulling pin by hand; caught between couplers.	D.	35	S.
135	Hand bruised.....	Lifting rod would not work; took hold of pin by hand.	D.	48	S.
136	Clavicle broken	Caught between bumpers	N.	24	
137	Hand injured.....	Lifting lever would not work; holding up with hand.	D.	22	S.
138	Foot injured	Pushing knuckle over with foot	D.	37	
139	Fingers mashed; body squeezed.	Opening knuckle; car dropped down on him.	D.	22	
140	Thumb crushed	No lever; lifted pin by hand	N.	23	
141	Finger crushed.....	Uncoupling; slack ran out; caught finger.	D.	21	
142	Foot bruised.....	Attempted to kick coupler over.....	D.	35	
143	Finger mashed.....	Coupling; finger caught between drawbars.	D.	21	
144	Finger crushed.....	Coupling; caught between end sill and lever.	D.	22	
145	Arm bruised.....	Uncoupling; lever slipped, striking his arm.	D.	21	
146	Contusion of hand....	Uncoupling; hand caught behind lever..	D.	21	
147	Fracture of rib	Coupling; caught between lever and caboose.	D.	20	
148	Body crushed	Coupling with chain; caught between bumpers.	D.	30	
149	Hand crushed.....	Coupling; caught between lever and end sill of car.	D.	21	
150	Finger bruised	Uncoupling; caught between lever and end sill of car.	D.	26	
151	Thumb mashed	Lever would not work; caught between sill and drawbar.	N.	23	4 months.
152	Contusion of pelvis...	Taking chain off crippled car; engine backed.	N.	26	
153	Finger lacerated	Uncoupling; caught between lever and end sill of car.	D.	29	
154	Arm crushed	Chain broken; reached over; caught between bumpers.	D.	23	
155	Finger mashed	Holding lock pin up; caught between drawhead and deadwood.	N.	22	
156	Fingers bruised	Coupling with chain; using link on curve.	D.	30	
157	Hand crushed.....	Opening knuckle; had hold of lever; caught by projecting lumber on car.	D.	.....
158	Knee injured.....	Coupling; apron on car fell on leg	D.	33	
159	Foot mashed	Coupling; pushing drawbar over with foot.	D.	30	
160	Finger mashed.....	Coupling; failed to make first time; went between to adjust knuckle; caught.	D.	24	

List of injuries to employees reported as occurring in coupling or uncoupling cars—Cont'd.

JULY, 1902—Continued.

1.	2.	3.	4.	5.	6.
Record No.	Injury.	Cause as reported.	Daylight (D.) or darkness (N.).	Age.	(See note.)
161	Finger bruised	Uncoupling; lever broken; took hold of tumbler with hand.	D.	22	
162	Ruptured.....	Uncoupling; pulling lever to cut off car.	D.	.....
163	Fingers mashed	Caught between end of lock pin and deadwood; bad-order cars.	D.	.....
165	Foot mashed	Opening knuckle; cars ran down on him.	N.	.....
167	Fingers mashed	Coupling narrow-gauge cars; using crooked link.	D.	24	
168	Finger mashed	Caught between latch and coupler on pilot.	D.	31	
169	Foot crushed	Foot caught in guard rail	N.	82	
170	Arm mashed	Opening knuckle; arm caught between couplers.	D.	21	
171	Hand mashed	Caught between dead blocks while trying to adjust knuckle.	D.	20	
172	Armand hand bruised	Coupling safety chains	D.	22	
173	Foot bruised.....	Engine to couple to bad-order car; went to arrange knuckle.	N.	22	
174	Hand mashed	Coupling; caught between lever and car.	D.	26	
175	Leg broken.....	Lever disconnected; went between cars to lift pin.	N.	24	
179	Foot bruised	Pushing drawbar over with foot	D.	30	
181	Finger mashed.....	Uncoupling; raising pin by hand	D.	.....
183	Hip bruised	Stepped between cars while in motion to raise lever.	D.	.....	S.
184	Finger mashed	Reaching in to get bolt just as coupling was made.	D.	29	
185	Finger cut off	Coupling; caught between bumpers	D.	.....
186	Body bruised.....	Opening knuckle; squeezed by projecting load.	N.	.....
187	Hand bruised	Caught between lever and end sill of car.	N.	25	
188	Fingers pinched.....	Chain detached; reaching for pin	D.	26	
189	Finger bruised	Knuckle being out, making coupling by hand.	D.	28	
190	Fingers mashed	Uncoupling by hand; caught between pin and deadwood.	D.	41	6 days.
191	Finger bruised	Coupling; load shifted	D.	
84	Fingers mashed	Holding lever up by hand	N.	25	

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1	Bruised.....	Opening knuckle	D.	30	S.
2	Hand bruised.....	Uncoupling; hand caught between deadwood and drawbar.	D.	21	S.
4	Finger mashed	Coupling	D.	21	S.
6	Arm bruised	Coupling on curve; had arm caught.....	D.	22	S.
7	Fingers mashed.....	Uncoupling; slack ran out, caught hand.	D.	30	S.
8	Thumb injured.....	Coupling	D.	(?)	S.
9	Foot injured.....	Uncoupling; caught between main and guard rails; flange of wheel ran against foot.	D.	27	S.
10	Fingers mashed.....	While lifting pin.....	D.	24	S.
11	Finger caught.....	Took hold of lever to lift pin; slack ran in, and was caught.	D.	21	
12	Hand bruised	Uncoupling; reaching over and taking hold of pin.	D.	25	
13	Finger broken.....	Coupling; brake flew off	D.	25	
14	Foot crushed	Between drawheads.....	.....	.....
15	Finger mashed.....	Caught between drawbars	N.	28	
16	Finger and thumb mashed.	Caught between bumpers.....	D.	26	
18	Finger crushed.....	Uncoupling; had to take hold of knuckle pin.	D.	28	
19	Spraining ankle and knee and mashing left arm.	Cutting off cars; was thrown and dragged	N.	32	
20	Back and chest injured.	Squeezed between cars.....	N.	26	
21	Left hand mashed....	In opening knuckles.....	D.	22	
22	Arm, wrist, and elbow pinched.	Uncoupling; holding coupler latch	D.	25	S.
23	Finger bruised	Raising latch in coupler; got finger caught behind drawbar.	D.	24	

List of injuries to employees reported as occurring in coupling or uncoupling cars—Cont'd.

AUGUST, 1902—Continued.

1.	2.	3.	4.	5.	6.
Record No.	Injury.	Cause as reported.	Daylight (D.) or darkness (N.).	Age.	(See note.)
24	Hand crushed	Lumber shifted	N.	38	
25	Hand mashed	Coupling cars	N.		
26	Hand badly injured..	Caught under uncoupling lever by fellow-brakeman stepping on lever while uncoupling.	D.	23	
27	.....	Couplers missed; went in to open; was caught.	N.	33	S.
28	Foot badly squeezed..	Tried to shove drawbar with foot	D.	35	
29	Finger crushed	Coupling	D.		
30	Thumb bruised and cut.	Uncoupling; attempting to lift pin	D.	24	
31	Back contused	Cutting off cars; was struck by step.....	N.	35	
33	Finger bruised	Uncoupling; raising pin lifter.....		34	
34	.....do	Pin lifter stuck; attempted to lift pin....	D.	22	
35	Finger broken and bruised.	Lifting pin with fingers	D.	38	
36	Finger split open.....	Tried to pull pin			
37	Foot jammed.....	Caught foot while pushing drawbar over.	D.	23	
38	Finger caught.....	Knuckle would not open; caught between pin and deadwood.	D.	21	
39	Hand crushed	Putting in pin to make safe coupling, slack ran in; caught between platforms of cars.	D.	35	
40	Toes mashed	Opening knuckle which was broken; it fell on foot.	D.		
41	Finger mashed	Chain disconnected, raising pin by hand.	D.	35	S
42	Arm bruised.....	Injured in some way unknown while coupling.	N.	24	
43	Toes mashed	On car holding up pin with hand, caught between drawbars.	N.	26	
44	Thumb broken	Chain to lift lever broken, caught between deadwoods.	N.		
45	Foot mashed	Coupling engine to train, caught under pilot.	D.	22	S.
46	Finger crushed.....	Opening knuckle, caught hand.....	D.	32	9 months
47	Thumb crushed	Caught between coupler and knuckle ...	D.	28	8 months.
48	Finger mashed	Chain disconnected, attempted to lift pin by hand.	D.		
49	Foot bruised	Attempted to shove drawbar over with foot, on curve.	D.	26	
50	Foot crushed	Standing on footboard of engine, attempted to close knuckle with foot.	N.	28	
51	Body bruised.....	Attempting to uncouple safety chains ...	N.	22	
52	.....do	Coupling, rolled between car and platform.	N.	33	
53	Finger bruised	Coupling cars	D.	23	S.
54	Finger cut off	Holding up lock pin by hand, caught between pin and deadwood.	D.		
55	Leg and ankle cut and bruised.	Coupling, wheel catching him.....			
56	Hand mashed	Caught between couplers while coupling.	D.	26	1 week.
57	Hand crushed.....	Attempted to pull drawbars open.....	D.		
58	Hand injured	While uncoupling car from train	D.	25	
59	.....do	Caught fingers in chain	D.	52	
60	Finger cut off	Uncoupling on curve, lift rod slipped under running board of tank.	D.	24	
61	Knee bruised.....	Riding on footboard of engine, bad-order car having no drawbar came too close to engine, catching him.	N.	24	
62	Toe mashed	Kicking knuckle open with foot.....	D.	43	
63	Fingers mashed	Lifting pin on bad-order cars, cars came together.	D.	52	
64	Finger mashed	Projecting load on lumber car; caught between lever and lumber on car.	D.	27	
65	Hand bruised	Coupling with link and pin, pin jumped out of drawhead.	D.	26	
66	Fingers bruised	Opening knuckle, cars came together...	N.	31	
67	Hand mashed off.....	Slipped on rail, hand caught between drawheads.	N.	35	
68	Foot injured.....	Attempted to shove coupler over with foot.	D.	23	
69	Foot bruised.....	Caught in guard rail	D.	30	S.
70	Foot cut off.....	Slipped off brake beam and fell.....	D.	27	
71	Arm squeezed	Opening jaw on coupler.....	D.		
72	Finger contused.....	Making link and pin coupling	D.	28	
73	Fingers cut off.....	.....do	D.	18	

List of injuries to employees reported as occurring in coupling or uncoupling cars—Cont'd.

AUGUST, 1902—Continued.

1.	2.	3.	4.	5.	6.
Record No.	Injury.	Cause as reported.	Daylight (D.) or darkness (N.).	Age.	(See note.)
74	Finger bruised	Chain disconnected; was pulling pin by hand.	D.	53	
76	Toe crushed	Attempting to shove knuckle with foot..	N.	31	
77	Foot bruised	Attempting to shove drawbar over with foot.	D.	34	
78	Finger bruised	Holding lever up to couple, caught between lever and stirrup.	N.	22	
79	Foot crushed; arm bruised.	While uncoupling, fell under wheels	N.	32	7 months.
80	Finger cut.....	Coupling, caught in some way.....	N.	36	
81	Body squeezed	Uncoupling safety chains, caught between cars.	D.	22	2 months.
82	Fingers bruised	Uncoupling, took hold of tumbling lever with hand, hand lever gone.	D.	30	
83	Finger cut off	Lift pin broken, pulling pin by hand, caught between drawbar and deadwood.	D.	34	
84	Fingers mashed	Trying to open knuckle, slack ran in.....	N.	35	
85	Hand mashed	Coupling, lifting lever too long, caught between lever and end sill of tank.	D.	29	
86	Head contused	Coupling engine to car, caught between ash pan of engine and engine pit.	N.	28	
87	Hand mashed	Adjusting coupler, cars came together...	N.	23	
88	Finger mashed	Opening knuckle, cars came together....	D.	27	
89	Body bruised.....	Caught between cars while coupling	D.	37	
90	Legs contused and body bruised.	Defective coupler; stooping over to see what was the matter and wheel caught foot.	N.	37	
91	Leg cut.....	Went to uncouple cars before air hose was cut and hose coupling struck his leg.	D.	21	
92	Rib fractured	Squeezed between tender and buffers ...	D.	47	
93	Hand crushed.....	Opening knuckles, caught between drawbars.	D.	42	
94	Finger crushed.....	Opening knuckles, caught between pin and drawbar.	D.	21	
95	Leg bruised	Standing on break beam, shock when coupling was made caused him to fall.	D.	33	
96	Contusion of ankle...	Pushing drawbar over with foot	D.	23	
97	Foot crushed	do	D.	28	
98	Fingers injured	Caught between lever and holder.....	D.	29	
99	Body bruised.....	Squeezed between dirt boards	D.	30	
100	Toe jammed.....	Drawbar fell on foot	N.	31	
101	Body bruised.....	Drawbar out, caught between cars.....	D.	23	
102	do	No footboard, stepped on iron rods, missed.	D.	22	S.
103	Hand bruised	Chain disconnected, raising pin by hand.	D.	31	
104	Body bruised.....	Chain broken, caught between cars.....	D.	27	
105	Heel mashed	Coupling missed, jumping out, wheel caught foot.	D.	.....
106	Thumb bruised.....	Coupling log cars	D.	.....
107	Fingers lacerated	Opening knuckle, caught between couplers.	N.	22	
108	Body bruised.....	Caught between deadwoods while coupling.	D.	26	
109	Arm and leg mashed .	Opening lip of coupler, caught between drawheads.	D.	21	
110	Chest crushed	Coupling on inside of sharp curve, caught.	D.	25	
111	Thumb bruised.....	Caught between lever and end sill of car.	N.	26	
112	Hand jammed	Pulling pin in bad order car, slack ran in.	D.	.....
113	Body jammed.....	Stumbled and caught between drawheads	D.	.....
114	Finger crushed.....	Coupling coach to engine	D.	.....
115	Knee cut	Running along beside car holding lever, fell.	.....	23	
116	Skull fractured and back strained.	Uncoupling, lost hold and fell between cars while in motion.	D.	32	
117	Back bruised.....	Missed hold and fell while uncoupling ..	D.	28	
118	Finger bruised	Caught between pin and engine	D.	30	S.
119	do	Caught hand behind coupling pin	D.	29	S. 1 month.
120	Hand bruised	Caught hand behind pin	D.	28	
121	do	Caught between uncoupling lever and car	N.	27	
122	Foot bruised	Attempted to open knuckle with foot....	D.	28	
124	Hand bruised	Chaining one car to another, slack ran in.	D.	35	
125	Hand and foot cut off.	Uncoupling, hand slipped off lever, fell between cars.	D.	.....

List of injuries to employees reported as occurring in coupling or uncoupling cars—Cont'd.

AUGUST, 1902—Continued.

1.	2.	3.	4.	5.	6.
Record No.	Injury.	Cause as reported.	Daylight (D.) or darkness (N.).	Age.	(See note.)
126	Hand injured	Caught between lever and deadwood	D.	.....
127	Finger contused	Rod broken off, holding coupler up by hand.	D.	34	
128	Body bruised	Making coupling, fell under cars between rails.	D.	37	
129	Finger lacerated	Opening knuckle	D.	21	
130	Finger bruised	Caught behind uncoupling lever	D.	23	
131	.....do	Raising pine by hand, caught sill and drawbar.	N.	22	6 months.
132	Fingers pinched	Uncoupling on curve, caught between lever and end sill.	D.	24	
133	Fingers crushed	Uncoupling on curve, caught lever and tank of engine.	D.	21	
134	Arm crushed	Caught between coupler and end of car..	N.	21	
135	Hand crushed	Caught between lever and end of car....	D.	22	
136	Finger crushed	Caught between end gate of car and stake of other car.	D.	27	
138	Finger bursted	Caught between lever and end of car....	D.	28	
139	.....do .....	.....do	D.	.....
141	Fingers crushed	Opening knuckles, caught between couplers.	N.	35	
142	Body bruised	Adjusting couplers, caught between ends of cars.	D.	29	
143	Finger crushed	Caught behind pin while uncoupling....	D.	22	
144	Hand bruised	Uncoupling coach, brake wheel recoiled.	N.	27	S.
145	Fingers cut and bruised.	Coupling cars	N.	27	
146	Finger crushed	Caught between sill and coupling pin...	D.	31	
147	Body squeezed	Coupling with chain, caught between cars.	D.	29	
148	Arm crushed	Caught between cars while coupling	D.	30	
149	Fingers injured .....	.....do	D.	28	
150	Heel injured	Caught under wheel while making coupling.	D.	34	
151	Body bruised	Uncoupling, struck by car on opposite track.	N.	24	
152	Finger bruised	Caught between lever and end sill of car.	N.	32	
153	Body injured	Opening knuckle; stepped on stone and fell.	D.	32	
154	Body bruised	Uncoupling cars in motion; foot slipped.	D.	26	S.
155	Finger lacerated	Uncoupling engine from train	D.	22	2 months.
157	Hand injured	Caught between lever and end of car....	D.	24	S.
158	.....do	Caught between lever and end of tank ..	D.	22	S.
159	.....do	Caught between lever and end of car....	D.	29	S.
160	.....do .....	.....do	D.	24	S.
161	Body injured	Cut cars; leaned out too far	D.	27	S.
162	Wrist crushed	Caught between lever and tender of engine.	D.	30	S.
163	Hand contused	Caught between end sill and lever	D.	21	S.
164	Thumb bruised	Caught between lever and sill of car....	D.	57	S.
165	Thumb crushed	Caught between lever and tender of engine.	D.	25	S.
166	Hip bruised	Coupling; slipped and fell under cars....	N.	20	S.
167	Finger crushed	Raising knuckle pin; caught between pin and coupler.	D.	26	S.
168	Finger contused	Caught between lever and end sill of car.	D.	34	S.
169	Hand bruised	Caught between pin and end sill of car..	D.	32	S.
170	Hand lacerated	Caught between lever and end sill of car.	D.	48	S.
171	Finger bruised	Caught between lever and car	D.	34	
172	Leg crushed	Slipped and fell; leg run over	D.	26	
173	Body bruised	Coupling; squeezed between cars	N.	23	S.
174	Finger crushed	Caught between coupler and end sill of car.	D.	22	
175	Fingers lacerated	On curve; caught between lever and sill of car.	N.	27	1 month.
176	Foot crushed	Kicked knuckle open with foot	D.	25	
177	Arm crushed	Making chain coupling, caught between cars.	D.	23	
178	Fingers bruised	On curve; caught between lever and coach.	D.	24	
179	.....do	On curve; caught between lever and sill of car.	D.	25	
180	Hand bruised .....	.....do	D.	32	
182	Arm bruised	Pulling pin between two shop cars; caught between.	N.	28	
183	Armand leg lacerated	Making a coupling; caught foot in frog..	D.	22	

List of injuries to employees reported as occurring in coupling or uncoupling cars—Cont'd.

AUGUST, 1902—Continued.

1.	2.	3.	4.	5.	6.
Record No.	Injury.	Cause as reported.	Daylight (D.) or darkness (N.).	Age.	(See note.)
184	Rib fractured	Struck in chest by coupling lever.....	D.	30	
186	Finger crushed.....	Opening knuckle; slipped, hand caught between drawheads.	D.	27	
187	Thumb lacerated.....	Caught between lever and rest	D.	34	
188	Finger mashed	Lever stuck; raised pin by hand, slack ran up.	D.	23	
189	.....do	Caught between lever and end sill of car.	D.	27	
190	.....do	On curve; caught between lever and end sill of car.	D.	24	
191	Ankle sprained.....	Uncoupling; stepped on piece of coke...	N.	24	9 months.
192	Thumb broken	Unchaining cars; hand caught between tenders.	D.	37	
193	Hand bruised	Caught between lever and end sill of car.	D.	42	
194	.....do	Caught between lever and end of car....	N.	26	
195	.....do	Caught between lever and end sill of car.	D.	25	
196	Finger mashed.....	Lifter pin disconnected; lifted pin by hand.	N.	35	
197	Body bruised.....	Caught between cars and squeezed	N.	30	
198	Finger mashed.....	Lifted latch pin by hand; caught between drawheads.	D.	23	
199	Arm crushed	Opening knuckle; caught by bumper....	D.	23	
201	.....do	Latch-pin key missing; tried to replace pin by hand.	D.	30	
202	Finger mashed	Took hold of pin with fingers.....	N.	22	
203	.....do	Chain broken; tried to adjust drawhead by hand.	D.	21	
204	Thigh bruised.....	Knuckle fell out and struck him.....	D.	22	
205	Hip bruised	Lift rod disconnected; went in to pull pin by hand; knuckle came out and struck him.	D.	28	
206	Thumb mashed	Opening knuckle; caught between couplers.	D.	21	
207	Hand mashed	Using hand to lift rod; caught between bumpers.	D.	28	
208	Finger contused.....	Pushing coupler over	D.	23	
211	Fingers mashed	Caught between lift rod and casting	D.	32	
212	Hand bruised	Lifted pin with hand; caught between pin and draft timbers.	D.	25	
213	Fingers mashed	Opening knuckle; caught finger, slack ran out.	D.	38	
214	Thumb mashed	Chain broken; lifting pin by hand.....	D.	55	
216	Finger mashed.....	Opening knuckle; slack ran in	D.	22	
217	Hand bruised	Caught between end of main rod and pilot beam.	N.	43	
218	Finger mashed.....	Caught between lever and end of car....	N.	.....	5 months.
219	Fingers mashed	Caught between lever and end sill of car.	D.	24	
221	.....do	Knuckle broken; using link and pin	D.	.....
222	Finger cut off	Slack ran in	D.	.....
223	Finger bruised	Caught between deadwood and drawbar.	D.	24	
224	Foot crushed	Making coupling; caught in frog	D.	.....
524	Finger mashed.....	Trying to close knuckle.....	D.	21	

SEPTEMBER, 1902.

1	Finger mashed	Caught between deadwood and knuckle.	D.	25	
2	Hand cut and mashed	Caught between drawheads.....	D.	24	
3	Finger mashed	Caught while coupling with link and pin.	N.	24	
5	Hand mashed	Caught between lever and end sill of car.	D.	27	
9	Foot sprained	Lever chain missing; stepped in between to cut, stepped in hole.	D.	24	
10	Body cut and bruised	Uncoupling cars while moving; slipped and fell.	N.	23	5 months.
11	Arm bruised.....	Uncoupling moving cars; caught between deadwoods.	N.	29	
13	Body crushed	Uncoupling engine from train; slipped..	N.	38	
14	Arm cut off.....	Caught between deadwood blocks.....	D.	58	
15	Arm crushed	Reaching over bumping blocks to uncouple.	N.	.....
16	Finger mashed.....	Reaching in to throw lever	D.	30	
19	Fingers crushed.....	Opening knuckle; caught between drawbars.	D.	45	
20	Head cut.....	Coupling engine; lump of coal fell on head.	N.	35	8.
21	Hand mashed	Pushing knuckle lock down; slack ran in.	D.	26	

List of injuries to employees reported as occurring in coupling or uncoupling cars—Cont'd.

SEPTEMBER, 1902—Continued.

1.	2.	3.	4.	5.	6.
Record No.	Injury.	Cause as reported.	Daylight (D.) or darkness (N.).	Age.	(See note.)
22	Hand mashed	Opening knuckle; stumbled, with hand on coupler as cars came together.	D.	32	
23	Collar bone broken...	Caught between end sills	D.	.....
24	Foot cut.....	Making coupling; stepped on board with nail in it.	N.	.....
25	Finger mashed	Adjusting couplers on curve; caught between couplers.	N.	25	
26	Thumb bruised.....	Adjusting couplers on curve; caught between knuckle of one and jaw of other.	D.	28	
27	Thumb and finger mashed.	Opening knuckle, slipped; caught hold of drawbar.	N.	22	
28	Finger mashed	Pin disconnected; slack ran in.....	D.	23	
29	Shoulder dislocated ..	Engine backed train, catching him between cars.	N.	29	
30	Arm bruised.....	Caught between car and lever	D.	25	
31	Finger cut off.....	Caught between lever and car	D.	22	1 month.
32	Body bruised	do	D.	35	
33	Finger cut.....	Pin-lifter chain broken; attempted to pull pin by hand.	D.	25	
34	Finger crushed.....	Pin lifter stuck; attempted to pull pin by hand.	D.	29	
35	Arm crushed	Adjusting couplers; caught between them.	N.	30	
36	Thumb crushed	Caught between lever and drawbar.....	N.	29	
37	Finger crushed.....	Went in to pull pin; caught.....	D.	24	
38	Finger cut off.....	Caught between pin and deadwood.....	N.	25	
39	Fingers cut off.....	Pin stuck; tried to push it down with fingers.	D.	28	
40	Legs bruised.....	Coupling; caught between cars and platform.	D.	25	
41	Body bruised	Caught between cars and building.....	D.	31	
42	Foot bruised	Took pin out of coupler; knuckle fell on foot.	D.	31	
43	Hand bruised	Opening knuckles; slack ran in.....	D.	23	
44	Foot crushed	Pushing drawbar over with foot; caught.	D.	.....
45	Arm bruised.....	Switching bad-order cars; went in between to lift pin by hand.	D.	23	
46	Finger mashed	Using hand to raise pin; caught between knuckles.	D.	29	
47	.....do	Uncoupling car with hand; no lever; caught.	D.	28	
48	Face cut.....	Struck face against lever pin.....	N.	45	S.
49	Foot pinched.....	Kicking drawbar over with foot	D.	22	
50	Elbow bruised.....	Pulling pin by hand; slipped, struck elbow.	D.	32	S.
51	Toes crushed	Uncoupling; slipped off brakebeam.....	N.	27	
53	Hand crushed	Opening knuckle; slack ran in	N.	24	
55	Finger crushed.....	Adjusting drawbars; caught	D.	25	
56	Toe cut off.....	Pushing knuckle with foot.....	D.	34	
57	Finger crushed.....	Drawhead lever fell on finger when coaches came together.	D.	24	
58	Body squeezed	Trying to hook safety chains on curve ...	D.	33	
59	Two fingers cut off ...	Making coupling; link and pin	D.	28	
60	Finger broken.....	do		26	
61	Finger cut off	do	D.	27	
62	Thigh contused	do	D.	26	
63	Hand contused.....	Making coupling; link and pin	D.	23	
64	Thumb fractured	do	D.	22	
65	Thigh contused	Caught between drawheads while making coupling.	D.	31	
66	Foot bruised	Coupling; wheel run over foot	N.	23	
67	Fingers crushed.....	Reaching over for lever; caught between deadwood and drawhead.	D.	21	
68	.....	Lever bent; uncoupling by hand	N.	26	4 months.
69	Arm crushed	Reached between cars to straighten key of coupler; caught between deadwoods.	D.	24	3 months.
70	Fingers crushed.....	Opening knuckle; slipped between cars..	D.	32	
71	Body squeezed	Adjusting couplers; slack ran in.....	D.	.....
72	Hand cut off	Caught between draft irons.....	N.	28	
73	Foot crushed	Pushing drawhead over; knocked down.	N.	27	
75	Arm mashed	Adjusting knuckle; caught between bumpers.	D.	25	
76	Finger bursted	Holding lock pin up when cars came together.	D.	.....

List of injuries to employees reported as occurring in coupling or uncoupling cars—Cont'd.

SEPTEMBER, 1902—Continued.

1.	2.	3.	4.	5.	6.
Record No.	Injury.	Cause as reported.	Daylight (D.) or darkness (N.).	Age.	(See note.)
77	Finger broken	Caught between drawhead and dead-woods.	D.	23	
78	Finger fractured	Lift chain broken, raised pin by hand; pinched.	D.	30	
79	Body bruised	Lever would not raise pin, using hand; caught between drawbars.	D.	36	
80	Arm broken	Uncoupling engine from car .....	.....	23	
83	Finger injured	Uncoupling safety chains; slack ran out.	D.	34	S.
84	Body bruised	Stumbled over something between tracks.	N.	23	
85	Hand crushed	Opening knuckle; cars came together ...	N.	22	
86	Finger bruised	Caught between lever and end sill of car.	D.	30	
87	Ankle sprained	Holding up uncoupling lever; stepped on end of tie.	N.	23	
88	Body squeezed	Opening knuckle; caught between cars..	D.	30	
89	Finger mashed	Caught between lever and end sill	D.	22	
90	Thumb mashed	do	D.	21	
91	Fingers mashed	Opening knuckle; caught between couplers.	N.	23	
92	Finger mashed	Chain disconnected; pulling pin by hand.	D.	22	
93	Foot mashed	Pushing coupler into position	D.	26	
94	Hand crushed	Caught between lever and end sill	D.	22	
95	Body crushed	Couplers passed each on curve; caught between engine and end of car.	N.	25	
96	Testicles injured	Hands slipped from lever; lever struck him.	D.	35	
97	Elbow crushed	Reaching over bumpers to uncouple; caught between couplers.	D.	48	
98	Ankle sprained	Running along side of train to uncouple; slipped on tie.	D.	23	
99	Ankle bruised	Pilot coupler slipped	D.	24	
100	Chest injured	Lift chain broken; slack ran in	D.	30	
101	Body crushed	Opening knuckle; caught between couplers.	D.	22	
102	Leg and groin bruised	Opening knuckle; stumbled on rail	D.	30	
103	Ankle sprained	Making coupling; foot turned under him.	D.	28	
104	Arm crushed	Unhooking safety chains; caught between couplers.	D.	41	
107	Finger mangled	Holding pin up by hand; caught between couplers.	D.	23	
108	Hand mashed	Opening knuckles; caught between couplers.	D.	23	
109	Hand bruised	Caught between lever and end of car....	D.	27	
111	Hip bruised	Knuckle broke; piece struck him	D.	37	
112	Side injured	Running alongside of car to cut; fell in ditch.	N.	26	
113	Chest bruised	Coupling; caught by lift lever	N.	27	S.
114	Finger bruised	Coupling on curve; caught by end sills..	N.	36	
115	Thumb cut and bruised.	Lock broken; caught between lever and deadwood.	D.	27	
116	Body bruised	Pulling pin and jerked from car	N.	.....
117	Finger pinched	Caught around safety latch	N.	25	
118	Fingers jammed	Coupling; caught hand	D.	25	
119	Finger jammed	Caught between pin and "dolly varden".	D.	21	2 weeks (S.).
120	Body squeezed	Trying to uncouple chain	D.	.....
122	Body bruised	Coupling engine to tender	D.	56	
123	Fingers mashed	Did not take hand off bumpers when engine came back.	D.	26	
125	Finger contused	Caught between lever and end sill	D.	35	
126	Foot bruised	Trying to cut off engine; pilot caught him.	D.	26	
127	Body bruised	Train backed; he was between cars	N.	23	
128	Thumb crushed	Adjusting coupler; caught	D.	.....
129	Toe crushed	Pushing drawbar over; caught	D.	32	
130	Thumb mashed	Pin disconnected; slack ran in	D.	.....
131	Body bruised	Glove caught in lever; thrown to ground.	N.	42	
132	do	Caught between bumpers	N.	30	
134	do	Cutting cars; caught	D.	26	1 month.
135	Hand crushed	Pulling knuckle open; engine struck cars; caught.	D.	23	
136	Armand hand bruised	Adjusting knuckle while cars were moving.	N.	26	
137	Finger mashed	Lever disconnected; caught between head block and operating chain.	D.	21	
138	Body bruised	Coupling on curve; link and pin	D.	32	

List of injuries to employees reported as occurring in coupling or uncoupling cars—Cont'd.

SEPTEMBER, 1902—Continued.

1.	2.	3.	4.	5.	6.
Record No.	Injury.	Cause as reported.	Daylight (D.) or darkness (N.).	Age.	(See note.)
139	Leg squeezed.....	Coupling on curve; caught between tank and beam.	D.	24	
140	Foot squeezed.....	Pushing drawhead over; caught between drawheads.	D.	35	
141	Finger crushed.....	Caught between trip lever and deadwood.	D.	24	
142	Heel injured.....	Kicked drawhead over with foot; caught between drawheads.	D.	26	
143	Ankle sprained.....	Running alongside holding up lever; stumbled.	N.	23	
144	Finger cut.....	Opening knuckle; cars came together ...	D.	25	
145	Finger cut.....	Chaining up bad order cars	N.	31	
147	Finger bruised	Caught between lever and end sill.....	N.	22	
148	Finger lacerated	Caught between lock pin and end sill ...	D.	22	
149	Body injured.....	Caught between car and telegraph pole .	D.	26	
150	Hand bruised	Caught below drawbar.....	D.	22	
151	Foot and hip injured.	Coupling up work train; end of gondola fell on him.	D.	35	S.
152	Body bruised	Caught between side of car and platform.	D.	22	
153	Arm bruised.....	Holding up pin, caught between bumpers.	D.	24	
154	Leg bruised	Standing on front of engine; when coupling was made was caught.	N.	24	
155	Hand bruised	Adjusting lever; caught between lever and end sill.	D.	24	
156	Finger broken.....	.....do	D.	24	
157	Hand bruised .....	.....do	D.	24	
158	Finger bruised .....	.....do	D.	23	
159	Heel bruised	Trying to open knuckle; caught.....	N.	22	
160	Hand bruised	Uncoupling; caught behind the pin.....	D.	23	
161	Thumb bruised	Caught behind coupler lever	D.	22	
162	Finger mashed	Lifting lever defective; caught between lever and end sill.	D.	31	
163	Hand bruised	Lifting uncoupling lever; slack ran out..	D.	36	
164	Finger burst.....	Holding up uncoupling lever; caught between lever and side sill.	N.	26	
165	Fingers crushed off...	Opening knuckle; caught.....	D.	21	
166	Hand injured	Pin fell on hand while coupling.....	D.	22	S.
167	Finger lacerated	Closing knuckle; slack ran in.....	N.	23	S.
168	Body bruised	Turning knuckle; slack ran in.....	D.	40	S.
169	Body squeezed	Coupling on curve; caught	D.	39	
170	Finger injured	Cutting cars; slack ran out	D.	37	
171	Thumb mashed	Lift rod disconnected; reaching over drawhead.	D.	27	
172	Foot crushed	Opening knuckle with foot	D.	23	
173	Wrist wrenched	Uncoupling; caught in brake wheel	N.	38	
174	Foot injured	Uncoupling; caught between car and coupler.	D.	27	
175	.....do	Attempted to straighten couplers; slack ran in.	D.	33	
176	Body squeezed	Stepped in to lift pin; slack ran in	N.	23	
177	Finger mashed.....	Caught between lever and tank	D.	28	
178	Body bruised.....	Making chain coupling	D.	19	
179	Finger crushed.....	Raising lever on short side of curve.....	D.	26	
180	Hand injured	Caught between lever and tank.....	N.	23	S.
181	Thumb injured	Caught between lever and end of car....	D.	33	S.
182	Finger injured	Attempted to cut engine loose	D.	23	S.
183	Hand injured	Caught between lever and bumper	D.	39	S.
184	Finger injured	Caught between knuckle pin and rail of car.	D.	31	S.
185	Finger contused.....	Caught between lever and tender of engine.	N.	23	S.
187	Thumb crushed	Coupler lever bent; drawing pin by hand.	N.	23	
188	Foot crushed	Pushing coupler over with foot; caught between coupler and deadwood.	N.	25	
189	Finger broken.....	Tried to lift pin by hand	N.	29	
190	Body bruised	Reaching over to turn angle cock; slack ran in.	D.	44	
191	Fingers crushed	Caught between lever and tender.....	D.	33	
193	Leg crushed	Jumped across pilot to adjust coupler; slipped.	D.	23	
194	Body bruised	Struck by corner of car	D.	34	S.
195	Arm broken	Lever would not raise pin; using hand; slack ran in.	D.	22	
196	Finger cut off	Using link; caught between link and drawhead.	D.	.....

List of injuries to employees reported as occurring in coupling or uncoupling cars—Cont'd.

SEPTEMBER, 1902—Continued.

1.	2.	3.	4.	5.	6.
Record No.	Injury.	Cause as reported.	Daylight (D.) or darkness (N.).	Age.	(See note.)
197	Body crushed	Went between cars; struck by projecting lumber,	D.	28	
198	Finger crushed	Opening knuckle	D.	23	
199	Body bruised	Caught between drawbars	N.	33	
200	Thumb and finger pinched.	Making coupling	N.	.....	S.
201	Finger mashed	Uncoupling; caught between drawheads.	N.	.....
203	Body squeezed	Coupling on sharp curve; link and pin ..	N.	.....
204	Toes mashed	Making coupling; stepped on cinder	D.	29	
205	Hand mashed	Holding up knuckle pin	D.	28	S.
206	Fingers crushed	Did not release lever quickly	D.	25	
207	Body pinched	Coupling	N.	23	
208	Body bruised	On short curve; chain broken; holding up pin by hand.	D.	35	.
209	Foot sprained	Caught between guard rail and main rail.	.....	21	
210	Knee bruised	Knuckle flew out; striking him	D.	40	
211	Body bruised	Coupling; caught between car and wood pile.	D.	25	
213	Body mashed	Crossing between cars; caught between drawheads.	N.	22	
214	Body bruised	Coupling with link; caught between bumpers.	N.	30	S.
215	Fingers mashed	Caught between buffers	D.	22	
216	Hand crushed	Coupling .....	.....	.....
217	Fingers crushed	Chaining cars; caught between couplers.	.....	.....
77½	Foot mashed	Pushing drawbar over with foot	D.	.....
56½	Thumb cut off	Coupling	D.	.....
111½	Arm and foot crushed.	Uncoupling; lost hold and fell, cars passing over him.	N.	3	3 months.

It will be observed that some of the explanations of cause and circumstances are not full and complete. In the more serious cases, which are thus imperfectly reported, inquiry has been made and corrected reports have been asked for. Not all of these inquiries have elicited satisfactory answers. It has been found, however, that incomplete reports which on their face seem to show that a man was attempting the absurdity of coupling automatic couplers by hand, usually refer to cases of coupling to tenders which have only a link coupling, or adjusting couplers in front of moving cars, or cases erroneously reported as "coupling" when in fact the man was trying to correct something that was wrong about an uncoupling mechanism.

TABLE NO. 4.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Conductors.		Brakemen, etc.		Enginemen.		Firemen.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—										
	1 Defect in car.....				16						1
	2 Ice or snow.....										
	3 Parting of train.....		1	2	16				2		
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	1	6	7	158		1		6	5	17
	5 While setting brakes.....		3	2	66						1
	Fell from—										
	6 Coal car.....				6						1
	7 Freight car other than box or coal car.....		1		10						1
	8 Engine or tender.....		3	6	51	1	11	3	28	2	1
	9 Passenger car.....		1		3						1
C7	10 Engines, tenders, or cars (all kinds) not in motion.....		1	4	57	2	26	1	45	1	5
	11 Miscellaneous causes.....		16	24	290		1		2	7	63
	12 Not clearly explained.....	1	5	45	77			2	3	6	8
	13 Slipped getting on moving trains or cars.....		9	4	110		2		3	7	22
	14 Jumping off moving trains.....		21	3	184		2		4	2	21
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....				17		6		13		2
	16 Fell from engine or cars by reason of defective hand holds and sill steps.....		1	1	44						
	17 Getting on or off moving engine.....	1	11	16	184	1	37		38	4	19
	18 Caught in frog, guard rail, or switch.....				4						
	Total.....	3	79	114	1,293	4	86	6	144	34	163

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

ACCIDENT BULLETIN,

No. 6.

OCTOBER, NOVEMBER, AND DECEMBER, 1902.

U. S. INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1903.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers, trainmen and other persons killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the most serious collisions in that quarter with passengers having been killed. There are notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties (4 killed, 126 injured) due to operating trains in which air brakes were used on only a portion of the cars; and the danger of running trains partially air braked is commented on.

Bulletin No. 2 contains a detailed list showing the cost and causes of the 27 most serious butting collisions in that quarter. In these collisions 70 persons were killed and 234 were injured, and the damage to cars, engines, and roadways amounted to \$306,511. The incompleteness of the statements of causes, as set in by the railroads, is commented on.

Bulletin No. 3 contains a list similar to that just mentioned, but showing rear instead of butting collisions. As in the first list, only the most serious accidents are considered; and of these there were 41, costing \$160,247. The number of persons killed was 43, and of injured 255.

Bulletin No. 4 contains a third list of collisions, this one including all classes; but includes only a few in which the damage was less than \$5,000. The totals of this list are, killed 30, injured 187, cost \$228,597. Collisions occurring when the trainmen had worked very long hours are commented on. In this bulletin a table is given showing the deaths and injuries due to trains parting. The aggregate of damage shown in this table is \$492,781; persons killed 14, injured 386. The table shows that nearly all of the coupler failures which resulted in collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table of the most serious train accidents in the quarter. Derailments as well as collisions are included, but cases causing damages of less than \$10,000 each are not included, except where the cause of the accident calls for notice. The 23 accidents shown in this table killed 81 persons and injured 358, and the aggregate damage reported was, for the 23 cases, \$308,395. The causes of a few of the accidents are set forth in some detail. A table is given in the bulletin showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

ACCIDENT BULLETIN,

No. 6,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS

DURING

OCTOBER, NOVEMBER, AND DECEMBER, 1902.

INTERSTATE COMMERCE COMMISSION,

WASHINGTON, D. C.

WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1903.

THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 6.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE
THREE MONTHS ENDING DECEMBER 31, 1902.

The number of persons killed in train accidents during the months of September, October, and December, 1902, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 266, and of injured 2,788. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 12,811 (938 killed and 11,873 injured). These accidents are classified in the following table. These reports deal only with (a) passengers, and (b) employees on duty:

TABLE No. 1.—Summary of casualties to persons, October, November, and December, 1902.

	Passen- gers.		Trainmen.		Other per- sons em- ployed on or around trains.		Switch tenders, crossing tenders, and watch- men.		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	38	840	119	880	6	79	2	15	11	77	138	1,051
Derailments	2	240	56	317	2	41	1	11	8	36	67	405
Miscellaneous train accidents (excluding the above), in- cluding locomotive boiler explosions .....	.....	17	20	220	.....	1	.....	2	1	12	21	235
Total train accidents	40	1,097	195	1,417	8	121	3	28	20	125	226	1,691
Coupling or uncoupling cars....	.....	.....	55	611	2	6	5	87	1	9	63	713
While doing other work about trains or while attending switches .....	.....	.....	32	1,265	4	55	7	59	2	175	45	1,554
Coming in contact with over- head bridges, structures at side of track, etc	1	5	18	243	.....	2	2	18	1	5	21	268
Falling from cars or engines or while getting on or off	34	371	152	1,855	6	31	5	119	26	135	189	2,143
Other causes	9	301	92	1,129	7	81	35	96	176	2,424	310	3,730
Total (other than train accidents)	44	677	349	5,106	19	175	54	379	206	2,748	628	8,408
Total, all classes	84	1,774	544	6,523	27	296	57	407	226	2,873	854	10,099

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident, are not reported. The items in the column headed "Switch tenders, crossing tenders, and watchmen," include switch tenders (not acting as brakemen), lever men, and lamp men; track, bridge, and crossing watchmen, and policemen.

It again becomes necessary to record very large numbers in this table, as was the case with Bulletin No. 5; and a comparison of this quarter with the same quarter of last year (Bulletin 6 with Bulletin 2) shows large increases in most items, except passengers and employees killed in train accidents. The only accident in this bulletin that is prominent by reason of a large number of fatal casualties is the rear collision of passenger trains recorded in the fourteenth item (No. 50) of the table of causes which appears below. In this collision 27 passengers were killed. It occurred on a straight line, quite level, on a clear night.

The engineman did not obey the red lights. The leading train was at a standstill short of the station; the engineman approaching sounded the whistle, indicating that he saw the red hand lantern swung by the brakeman, but he did not slacken speed; he evidently *assumed* that the train ahead was moving or was standing at or beyond the station. The engineman is reported as one of twenty-one years' experience, with a record which was good up to this time. This disaster affords an unusually striking illustration of one important difference between the time-interval and the space-interval principles of regulating trains. The report indicates that the engineman's terrible act was due to error as to just *where* the danger light was; a chief merit of the space-interval or block system is that the danger light is always in the same known location.

The total number of collisions and derailments was 2,759 (1,680 collisions and 1,079 derailments), of which 282 collisions and 99 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,462,056, namely: October, \$834,258; November, \$732,781; December, \$895,017. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Number.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	511	\$481,013	69	645
Collisions, butting.....	265	546,731	64	668
Collisions, trains separating.....	791	370,147	25	363
Collisions, miscellaneous.....	113	126,557	18	215
Total collisions.....	1,680	1,524,448	176	1,891
Derailments due to defects of roadway, etc.....	220	165,698	9	170
Derailments due to defects of equipment.....	434	351,710	7	109
Derailments due to negligence of trainmen, signalmen, etc.....	81	61,516	7	104
Derailments due to unforeseen obstruction, etc.....	58	75,353	12	65
Derailments due to malicious obstruction of track, etc.....	15	22,490	2	17
Derailments due to other causes.....	271	260,841	32	180
Total derailments.....	1,079	937,608	69	645
Total collisions and derailments.....	2,759	2,462,056	245	2,536

The table of prominent train accidents given below in this bulletin is made on very nearly the same basis that was adopted in Bulletin

No. 5, namely: To include (a) all cases in which the damage is reported at \$10,000 or over; (b) notable cases in which passengers are killed, and (c) cases doing damage less than \$10,000, and down to \$2,000, wherever the circumstances or the cause may be of particular interest. The number in the \$10,000 class—17—is the same as in Bulletin No. 5. The facts themselves, as shown in the table, in the column headed "cause," afford, in most cases, a sufficiently instructive comment on these collisions.

The most disastrous one (No. 50) has already been referred to. Four of these accidents were due wholly or chiefly to an engineman's falling asleep, and in three others the men at fault had been on duty very long hours. In three cases (Items 3, 10, and 13) there was a lack of experience. Items 5, 6, 22, and 25 indicate very defective discipline or training. Item 31 seems to indicate a moral deficiency.

Causes of thirty-four prominent train accidents.

[NOTE.—R. stands for rear collision; B., butting collision; M., miscellaneous; D., derailment; P., passenger train; F., freight and miscellaneous trains.]

Item.	Record No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Cause.
1	15	R.	F. and F....	2	0	\$994	Local freight standing at station; 12 hours late; no flag out; weather foggy; men on duty 25 hours 30 minutes.
2	67	D.	F	0	1	319	Derailing switch; engineman asleep; he had been off duty 14 hours, but had attended a funeral instead of taking rest.
3	2	R.	P. and F....	0	3	2,166	Flagman failed to go back far enough; a man of 7 months' experience, but only 2 weeks' experience on this division.
4	66	D.	F	1	0	2,240	Derailing switch; engineman asleep; he was killed.
5	10	B.	F. and F....	2	5	3,000	Engineman saw a "dead" engine on side track and by mistake took it for the head of a train which he was to meet.
6	24	M.	F. and F....	0	0	3,900	Crossing collision; engineman "lost his bearings;" on duty 17 hours.
7	32	R.	P. and F....	2	8	4,000	Train switching on main track during dense fog; flagging neglected; conductor and engineman on duty 23 hours.
8	57	B.	F. and F....	0	1	4,050	Engineman fell asleep; on duty 8 hours succeeding 12 hours' rest. Fireman (14 months' experience) also at fault.
9	11	M.	P. and F....	2	17	4,372	Crossing collision; no fixed signals; trainman (experienced) neglected to flag. The killed were passengers.
10	3	R.	P. and F....	2	2	5,175	Flagman went back, but failed to signal the oncoming train; seems to have thought his train had gone on to the other main track; a man of 3 months' experience.
11	44	D.	P	0	14	5,224	Broken rail; internal flaw; speed of train, 70 miles an hour; weight of engine, 93 tons; rails, 80 pounds per yard nearly new.
12	38	B.	F. and F....	0	2	6,000	Telegraph wire broken; dispatcher sent order by roundabout telephone line, but neglected to issue duplicate order on his own side of the break; a man of 3 weeks' experience at this point, but with a good record on other roads.
13	55	B.	F. and F....	1	1	6,700	Operator failed to deliver order, and failed to notify dispatcher; conductor and engineman failed to get clearance card; dispatcher failed to note lack of signature to order. Operator's experience 3 years, but in this place only 3 days, dispatcher, 6 months experience at this point; several years elsewhere.
14	50	R.	P. and P....	27	15	6,889	Engineman did not heed red lights. (See p. 4.)

Causes of thirty-four prominent train accidents—Continued.

Item.	Record No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Cause.
15	37	B.	P. and F....	1	8	7,000	Occurred at 5 o'clock, foggy morning; brakeman with red light failed to stop passenger train; had no torpedoes; did not think to throw lantern into cab. Conductor and engineman held responsible for not having provided torpedoes.
16	1	R.	P. and P....	1	28	9,000	Engineman disregarded distant signal indicating "caution;" man of good record and experience; weather clear; signal equipment complete.
17	36	B.	P. and F....	0	18	9,980	Operator failed to deliver meeting order; cleared signal (ignoring presence of order) only 21 minutes after he had received it.
18	52	R.	F. and F....	0	0	10,000	Runaway train on steep grade; engineman did not promptly give adequate signal for hand brakes when air brakes seemed to fail.
19	48	D.	P.....	1	7	10,600	Switch misplaced; left so by section foreman; experienced and with a good record.
20	51	R.	F. and F....	0	0	10,800	Runaway train on steep grade; conductor and 3 trainmen neglected to promptly use hand brakes; 40 cars in train; air brakes in use on 25.
21	6	R.	F. and F....	1	0	11,350	Train passed automatic block signal indicating "stop." Engineman was asleep and fireman neglected to observe signals. Engineman and fireman of the second of 2 engines drawing the train failed to detect the error, though rule required leading engineman to sound the whistle at each block signal.
22	40	B.	F. and F....	0	5	12,400	Conductor took the word of some unknown person, hidden from him by a car, that the opposing train had arrived, when it had not; engineman took conductor's word.
23	69	D.	P.....	1	8	12,430	Derailment, due to malicious removal of rail near trestle bridge.
24	72	D.	F.....	1	2	12,500	Runaway train on steep grade; rails wet or coated with sleet; 34 cars in train; 9 cars equipped with air brakes; "hand brakes always used on this grade."
25	58	B.	F. and F....	1	5	12,600	11.40 p. m.; engineman lost his location; experience 15 years, but in service on this division only 4 months.
26	56	B.	F. and F....	7	0	13,838	Conductor and engineman of northbound train overlooked orders.
27	19	B.	F. and F....	2	2	13,962	Conductor and engineman forgot orders.
28	25	M.	F. and F....	1	2	15,957	Runaway cars; brakeman (in yard) failed to set brakes.
29	30	D.	F.....	0	0	17,000	Open draw; draw properly signaled; engineman of 17 years' experience, on duty 4 hours.
30	22	M.	P. and F....	2	2	17,800	Freight train broke in two; rear portion collided with front portion; passenger train on adjacent main track ran into wreck.
31	9	B.	P. and P....	1	27	20,651	Occurred near same place as No. 19 (above). Operator failed to deliver order; told dispatcher he had signature of conductor when conductor had not arrived. Appears to have confused two or more orders relating to different things. Operator 19 years old; in service of the company 8 years in different capacities.
32	7	B.	P. and P....	2	23	25,800	Conductor and engineman started on a run of several miles to reach a meeting station without allowing a reasonable and sufficient time. Both men reported as experienced and with good records.
33	21	M.	P. and F....	1	5	30,000	Collision of a train with a string of 7 freight cars which had run down from a side track. Brakes on these cars had been loosened "by some unknown miscreant."
34	71	D.	P.....	2	6	32,915	Passenger train derailed by accidental obstruction; wreck took fire and combustible portions were consumed. The obstruction was a platform car, which, standing on a side track, had been violently jammed by a freight train backing into the siding, and was crushed and pushed afoul of the main track.
Total ..				64	217	361,612	

It is well recognized that the block-system or space-interval method of regulating the movement of railroad trains, the method that is required by law throughout Great Britain and Ireland, is a safer method than the time interval; and the fact has been touched upon in the annual reports of the Commission as well as in these bulletins. The records of the causes of rear collisions, which have been published, tend strongly to confirm this. At the same time it is everywhere understood that the block system itself depends on adequate care and discipline, and that defects in administration or inspection, or in apparatus, or negligence of enginemen or signalmen, sometimes lead to collisions where the block system is used. The fact that two or more serious collisions in the quarter under review occurred through failures of this kind emphasizes this matter, and a list has therefore been made of all the collisions occurring in this quarter which fall within this class. The list follows:

Rear collisions on railroads where the block system is in use.

Item.	Class. ^a	Cause.
a	1	Engineman ran past home and distant automatic signal standing against him. Weather clear. Engineman's record good.
b	2	Tower man "claimed" had authority from the station in rear to give clear block.
c	3	Engineman and fireman failed to see signal.
d	3	Do.
e	2	Ran past "red block."
f	3	Operator gave false clear signal; 2 employees killed.
g	3	Operator gave false clear signal; experience 10 months.
h	3	Engineman of switching freight disregarded automatic block signal (on 6-track line). Trains on three tracks were damaged.
i	3	Signal man wrongfully gave clear block signal.
j	3	Automatic signal against the train; engineman failed to proceed cautiously.
k	3	Operator wrongfully gave clear signal.
l	1	Operator wrongfully cleared block signal; experience 11 months.
m	1	Automatic block signal—designed to turn from clear to "danger" immediately before engine reaches it. In this case there was a blinding snow storm and the engineman assumed that the signal light (6.15 p. m.) showing red, was turned to red by his engine, but he did not see it move, and it was in fact motionless, having been set at "danger" by the preceding train. An error of judgment as to brake power, after he saw the tail lights of the preceding train, also contributed to the accident.
n	1	Occurred 11 p. m.; fast passenger train; 12 persons injured. Engineman disregarded automatic block signal; appears to have governed himself by the indication of another block signal, adjacent, not pertaining to the track on which he was running.
o	2	Incomplete report.
p	3	Engineman ran past automatic block signal indicating "stop." He had worked long and irregular hours, viz: On duty 8½ hours, off 1½ hours, on 14, off 4½, on 9½, off 4½, on 3 hours (at time of accident).

^aClass 1 includes cases where both trains are passenger trains; Class 2, a freight train and a passenger train; Class 3, both freight.

This list includes only those cases where the absolute block system was in use, or where it appears to have been the intention to have it in use. In addition to these, the reports show a number of collisions due to a lack of care in regulating the speed where a permissive block signal had been given. The train had entered a block section under a signal indicating that the section was occupied by a preceding train, and that, according to the rule, the speed should be regulated so as to avoid running into the train ahead.

There are also numerous collisions where the report makes no mention of the block system, but which occurred on lines of railroad that are supposed to be worked under the block system; many or all of these are, no doubt, due chiefly to failure to obey the permissive rule, requiring speed to be kept strictly within control.

A third class of collisions, of which instances frequently occur, includes cases in, or at the approach to, a yard. Roads which ostensibly use the block system are found frequently, and perhaps usually, to report these collisions in precisely the same manner as they are reported by roads which do not use the block system. This appears to indicate that the block system proper is used in connection with, or is modified by, a rule requiring trains to be brought under control on the approach to a yard (usually to all yards or stations on a division); and the engineman is to do this without being warned by a block signal or by any fixed signal.

It is matter for deep regret that again the number of coupling accidents reported is large as compared with the number for the preceding quarter, and very large as compared with the corresponding quarter of 1901. It is quite possible that the reports made by the railroad companies for the first few months of the operation of the accident-report law were incomplete. In the matter of collisions, and to some extent as regards other accidents, it was found that some roads had deliberately omitted from their reports certain accidents which, when their attention was called to the fact, they said they understood could be rightfully omitted, because the train affected was engaged in traffic wholly intrastate. It was claimed that such traffic was not subject to a Federal law. Care was taken to correct this erroneous view, and the accidents in question were included in supplemental reports.

It is probable, however, that many such cases were never discovered. A company which has omitted collisions and subsequently corrects its practice in this respect will, presumably, correct its practice in regard to reporting coupling accidents, though at the same time it may not go back and revise its reports of those classes of accidents concerning which the Commission has made no complaint.

The amendment to the safety-appliance law, which was passed at the last session of Congress, will correct erroneous views held by many railroad officers as to what trains and train operations are and what are not subject to a Federal regulating statute. This law (see page 11) deals only with couplers and air brakes, but the principle laid down—that a Federal law regulating interstate commerce affects all of the train and car movements on a railroad line over which interstate shipments are carried or interstate passengers travel—is of wider application; particularly when the purpose of Congress is to obtain information.

The increase in the number of coupling accidents is undoubtedly to be accounted for largely and perhaps chiefly by the enormous increase

in freight traffic and the consequent necessity of employing additional men. This fact was mentioned in the last bulletin. New men ought to be at first employed at such places and in such departments of the work as are the least dangerous to those who are inexperienced; but, in the stress of work occasioned by the congestion of coal traffic and by blockades at many places this rule has evidently been ignored. This tends to increase the number of casualties. The increase in freight traffic, putting unusual burdens on all departments of train and yard work, including the department of car inspection, also results, no doubt, in a less efficient condition of cars. Couplers and other parts are not so well cared for and maintained.

It is also to be noted that the swelling of the accident records by reason of the inexperience of new men may, and probably does, go on after the increase in the volume of traffic has reached its climax; for the enlargement of the number of train crews, yard crews, etc., has usually been inadequate at best. It has been observed that certain companies have engaged new men as fast as practicable, and in every way have striven to provide forces adequate to perform the work; but that these efforts were only partly successful, as is evident from the constant pressure on all the trainmen, old and new, to work as many hours daily as possible. It has therefore been necessary to continue adding new men after the capacity of the railroad and of its stock of locomotives and cars has been fully taxed and the increase in tonnage therefore stopped.

It will be observed that other accidents to trainmen have also increased largely, so that there is no ground (other than the lack of perfect maintenance due to congested traffic before referred to) for assuming that the coupling accident record indicates any increase in the risks or dangers of coupling work, or any change for the worse in the condition or quality of couplers.

The law just passed by Congress (March 2, 1903) facilitating in a marked degree the enforcement of the safety-appliance act, and putting engines, cabooses, and cars—all vehicles in ordinary railroad traffic—on a uniform basis as regards this act, will, it is confidently believed, produce a decided improvement in conditions.

Table No. 3, next following, is given in its usual form, but is supplemented by Table 3*a*, which describes more in detail the causes of casualties due to defective uncoupling mechanism.

TABLE NO. 3.—*Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Conductors.		Brakemen, etc.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.) preventing quick work.....			2	23		
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism).....				56		
3	Other causes, apparently due to defective uncoupling mechanism.....				11		
4	Defective draft gear (with automatic coupler).....				8		
5	Coupling to an engine or tender.....				31		
6	Same (with link-and-pin coupler).....				2		
7	Coupling on inside of sharp curve.....		3	3	29		
8	Foot caught in or between couplers while adjusting coupler.....				28		
9	Slipped, usually on ice or snow.....		1	3	25		
10	Foot caught in frog, guard rail, or switch.....			6	6		
11	Caught by overhanging load (on platform car).....			3	4		
12	Load shifted.....		1		3		
13	Engaged in operations preliminary to coupling.....	1		10	86		1
14	While coupling safety chains.....		1	1	6	1	
15	Link-and-pin coupler.....			1	45		
16	Link and pin, with automatic.....		1		14		
17	Coupling damaged cars (presumably an unavoidable risk).....			4	16		
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism).....		1	2	51		
19	Uncoupling, other causes.....			1	11		2
20	Miscellaneous.....		2	12	184		5
21	Not clearly explained.....		3	13	57		1
Total.....		1	13	61	691	1	9

The total number of accidents recorded in the above table is 776 (63 killed and 713 injured). Table 3a below discloses the causes of 36 per cent of these casualties. The first seven items in Table 3a embrace obvious defects in the apparatus.

TABLE 3a.—*Details of items 2, 3, 7, 18, 19 and 20 of Table 3.—Accidents occurring while using uncoupling mechanisms.*

	Cause.	Conductors.		Trainmen.		Other employees.		Total.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Lifting locking pin or block with hand.....				62		1		63
2	Lift chain missing.....				1				1
3	Lift lever missing.....				3				3
4	Broken lever.....				11				11
5	Broken chain.....			3	28		1	3	29
6	Defective lever.....			1	27			1	27
7	Defective or disconnected chain.....			1	22			1	22
8	Caught between car and lever.....		1		60				61
9	Caught between next car and lever.....				35		1		36
10	Lever on wrong side.....			1	5			1	5
11	Struck by lever.....				5				5
12	Caught finger in chain.....				1				1
13	Running alongside moving cars while switching; and holding up lever.....		1	1	8			1	9
Total.....			2	7	264		3	7	273

TABLE NO. 4.—*Details of Table 1.—Causes of accidents to employees classified as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Conductors.		Brakemen, etc.		Enginemen.		Firemen.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
	Fell from roof of box car by reason of—										
1	Defect in car				5						
2	Ice or snow		1	2	26						1
3	Parting of train		2	2	23				2		
4	Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....		7	6	128		2		1	2	6
5	While setting brakes		8	11	111						
	Fell from—										
6	Coal car		2		8						
7	Freight car other than box or coal car.....			1	4						4
8	Engine or tender	1	8	12	90	1	11	8	54		2
9	Passenger car		1	1	1						2
10	Engines, tenders, or cars (all kinds) not in motion		5		84	1	12	1	52		11
11	Miscellaneous causes	2	5	18	224					8	30
12	Not clearly explained	4	4	56	67			1	1	4	4
13	Slipped getting on moving trains or cars.....		26	10	154		1			6	24
14	Jumping off moving trains.....		39	4	298		1			5	32
15	Jumping from engines or cars anticipating collision, derailment, or other accident		8		29		9		13		
16	Fell from engines or cars by reason of defective handholds and sill steps.....		9	2	73				2		
17	Getting on or off moving engine	2	25	15	269		45	2	66	6	14
18	Caught in frog, guard rail, or switch.....				2						
	Total	9	145	140	1,596	2	81	12	191	26	130

AMENDMENT TO SAFETY APPLIANCE LAW.

AN ACT to amend an act entitled "An act to promote the safety of employees and travelers upon railroads by compelling common carriers engaged in interstate commerce to equip their cars with automatic couplers and continuous brakes and their locomotives with driving-wheel brakes, and for other purposes," approved March second, eighteen hundred and ninety-three, and amended April first, eighteen hundred and ninety-six.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the provisions and requirements of the act entitled "An act to promote the safety of employees and travelers upon railroads by compelling common carriers engaged in interstate commerce to equip their cars with automatic couplers and continuous brakes, and their locomotives with driving-wheel brakes, and for other purposes," approved March second, eighteen hundred and ninety-three, and amended April first, eighteen hundred and ninety-six, shall be held to apply to common carriers by railroads in the Territories and the District of Columbia and shall apply in all cases, whether or not the couplers brought together are of the same kind, make, or type; and the provisions and requirements hereof and of said acts relating to train brakes, automatic couplers, grab irons, and the height of draw-bars shall be held to apply to all trains, locomotives, tenders, cars, and similar vehicles used on any railroad engaged in interstate commerce, and in the Territories and the District of Columbia, and to all other locomotives, tenders, cars, and similar vehicles used in connection therewith, excepting those trains, cars, and locomotives exempted by the provisions of section six of said act of March second, eighteen hundred and ninety-three, as amended by the act of April first, eighteen hundred and ninety-six, or which are used upon street railways.

SEC. 2. That whenever, as provided in said act, any train is operated with power or train brakes, not less than fifty per centum of the cars in such train shall have their brakes used and operated by the engineer of the locomotive drawing such train; and all power-braked cars in such train which are associated together with said fifty per centum shall have their brakes so used and operated; and, to more fully carry into effect the objects of said act, the Interstate Commerce Commission may, from time to time, after full hearing, increase the minimum percentage of cars in any train required to be operated with power or train brakes which must have their brakes used and operated as aforesaid; and failure to comply with any such requirement of

the said Interstate Commerce Commission shall be subject to the like penalty as failure to comply with any requirement of this section.

SEC. 3. That the provisions of this act shall not take effect until September first, nineteen hundred and three. Nothing in this act shall be held or construed to relieve any common carrier, the Interstate Commerce Commission, or any United States district attorney from any of the provisions, powers, duties, liabilities, or requirements of said act of March second, eighteen hundred and ninety-three, as amended by the act of April first, eighteen hundred and ninety-six; and all of the provisions, powers, duties, requirements, and liabilities of said act of March second, eighteen hundred and ninety-three, as amended by the act of April first, eighteen hundred and ninety-six, shall, except as specifically amended by this act, apply to this act.

Public, No. 133, approved, March 2, 1903.

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers, trainmen, and other persons killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the most serious collisions in that quarter, 57 passengers having been killed. There are notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties (4 killed, 126 injured) due to operating trains in which air brakes were used on only a portion of the cars; and the danger of running trains partially air-braked is commented on.

Bulletin No. 2 contains a detailed list showing the cost and causes of the 27 most serious butting collisions in that quarter. In these collisions 70 persons were killed and 234 were injured, and the damage to cars, engines, and roadway amounted to \$306,511. The incompleteness of the statements of causes, as sent in by the railroads, is commented on.

Bulletin No. 3 contains a list similar to that just mentioned, but showing rear instead of butting collisions. As in the first list, only the most serious accidents are considered; and of these there were 41, costing \$160,247. The number of persons killed was 43, and of injured 255.

Bulletin No. 4 contains a third list of collisions, this one including all classes; but it includes only a few in which the damage was less than \$5,000. The totals of this list are, killed 80, injured 187, cost \$228,597. Collisions occurring where the trainmen had worked very long hours are commented on. In this bulletin a table is given showing the deaths and injuries due to trains parting. The aggregate of damage shown in this table is \$492,781; persons killed 14, injured 386. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table of the most serious train accidents in the quarter. Derailments as well as collisions are included, but cases causing damages of less than \$10,000 each are not included, except where the cause of the accident calls for notice. The 23 accidents shown in this table killed 81 persons and injured 356, and the aggregate damage reported was, for the 23 cases, \$308,395. The causes of a few of the accidents are set forth in some detail. A table is given in this bulletin showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a list of the 34 most serious accidents in the quarter, with notes on the cause of each. One of these was a rear collision, killing 27 passengers. There is also a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling, as compared with previous quarters; this is accompanied by a reprint of the amendment to the Safety Appliance law which was passed in March, 1903.

ACCIDENT BULLETIN,

No. 7,

SHOWING

COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS

DURING

JANUARY, FEBRUARY, AND MARCH, 1903.

**INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.**

**WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1903.**

THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

(8)

ACCIDENT BULLETIN NO. 7.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING MARCH 31, 1903.

The number of persons killed in train accidents during the months of January, February, and March, 1903, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 300, and of injured 2,834. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 927 killed, and 11,481 injured. These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE NO. 1.—Summary of casualties to persons—January, February, and March, 1903.

	Passengers.		Trainmen.		Other persons employed on or around trains.		Switch tenders, crossing tenders, and watchmen.		Other employees.		Total employees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	46	753	131	864	10	80	3	11	21	74	165	1,029
Derailments.....	6	325	60	358	6	67		7	3	25	69	457
Miscellaneous train accidents (excluding the above), including locomotive boiler explosions.....		13	13	242		3	1	3		9	14	257
Total train accidents.....	52	1,091	204	1,464	16	150	4	21	24	108	248	1,743
Coupling or uncoupling cars.....			64	656	1	9	9	62	2	8	76	735
While doing other work about trains, or while attending switches.....			22	1,246	2	57	6	67	5	164	35	1,534
Coming in contact with overhead bridges, structures at side of track, etc.....	1	1	22	235		4	1	12	2	7	25	258
Falling from cars or engines, or while getting on or off.....	33	297	121	1,826	6	36	15	100	13	161	155	2,123
Other causes.....	8	220	102	1,203	9	76	30	92	153	2,108	294	3,479
Total (other train accidents).....	42	518	331	5,166	18	182	61	333	175	2,448	585	8,129
Total, all classes.....	94	1,609	535	6,630	34	332	65	354	199	2,556	833	9,872

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident, are not reported. The items in the column headed "Switch tenders, crossing tenders, and watchmen," include switch tenders (not acting as brakemen), lever men, and lamp men; track, bridge, and crossing watchmen, and policemen.

The increase in numbers in all of the principal items of the record, which accompanies the enormous increase in railroad traffic throughout nearly all parts of the country, and which characterized the last Bulletin, appears again in this one. The more prominent accidents are again shown in a list by themselves (page 7).^{*} Of the accidents shown in this list, three were particularly disastrous: Items 5, 15, and 34 (numbers 9, 1, and 16). In these three collisions 43 persons were killed and 129 injured. Item 5 (12 employees killed) represents a cause which is very common, but the case has two obvious peculiarities which should be mentioned. First, the large company of laborers was carried in what is perhaps the most dangerous part of the train, instead of in a car at the rear end of the train, as is quite generally customary. Second, the use of flags, torpedoes, and fusees was depended upon to protect a train from rear collision at a time when, in consequence of the presence of deep snow on the ground, the use of the block system was demanded by considerations of more than ordinary gravity. Deep snow makes difficult walking for the flagman, and often interferes with the effectiveness of torpedoes; and if snow is blown about by the wind or disturbed by the moving train the engineman may have his view of the flagman's flag or lantern obstructed.

Item 15 represents one of the most remarkable collisions that has ever occurred in this country. The visual signals (automatic semaphore block signals), with which the road is equipped for the prevention of collisions, were in this case concededly adequate and in good working order, but the engineman appears to have been oblivious to all signals for a period of two, three, or more minutes; and as the train was running very fast, this length of time sufficed for him to pass three or four warning red lights, and therefore to collide with the passenger train in advance, causing a terrible wreck. The engineman was fatally injured, dying within a few hours; so that there is no explanation of his lamentable neglect, except an unconfirmed newspaper statement that before he died he said that his attention had been drawn away from the signals by some trouble with an injector. To attend to an injector, or to anything, to the neglect of the signals is, of course, under such circumstances, the grossest negligence. The condition of the engine

^{*}The list of these accidents will be designated as "Class A," and to insure a measure of uniformity in the records, the rule of classification which has been followed in Bulletins 5 and 6 will be made permanent. The accidents to be included in "Class A" are (1) all cases in which the damage is reported at \$10,000 or over; (2) notable cases in which passengers are killed, and (3) cases doing damage less than \$10,000, and down to \$2,000, wherever the circumstances or the cause may be of particular interest.

after the collision tends to indicate that the engineman neither shut off steam nor applied the brakes. This man appears to have been in good mental and physical health, so far as could be known. He had had ample experience, and his record is reported as good. The fireman is not held by the superintendent to be chargeable with any responsibility in the case; his duty, it is said, was at his fire.

Item 34 represents a notable disaster, in which the horrors of a butting collision between two passenger trains in the dead of night, both trains moving at high speed, were intensified by fire. The pecuniary loss is greater than it would have been but for the fire. The report of this collision gives a statement of the cause, from which the following paragraph is made up:

Two passenger trains, bound east and west, respectively, collided near C. From A east the stations are as follows: A, B, C, D, etc. The east-bound train was given orders at A to meet the west-bound train at C. This order for the west-bound train was placed at D (being No. 6), together with another order (No. 7) concerning a freight train to be passed at B. The operator at D, hearing the west-bound train approaching, and knowing what conductor was in charge of it, transmitted to the dispatcher this conductor's signature to both these orders, and obtained his approval ("complete") of said orders before the train had stopped at his station. After doing this he claims to have placed both orders—one on top of the other—on his counter, where the conductor could sign and take them. He then went out to the train to dispatch and receive the United States mail. This action was in violation of the regulations, which require an operator to obtain the signature of the conductor to an order before transmitting the signature to the train dispatcher to secure the dispatcher's "complete." The delivery of the order is required to be made by the operator in person, to whom the conductor must read the order for comparison with the copy retained by the operator. Immediately on stopping at D, the conductor of the west-bound train went to the office, signed and took one of the orders (No. 7)—that in regard to passing the freight train—but claims to have seen nothing of the other order (No. 6). He left the office before the operator returned, delivered to the engineman a copy of the order which he had taken, and the train was immediately started. The rule not only requires that the conductor read his order aloud to the operator for comparison, but also prohibits conductors from tearing off orders in the absence of the operator.

The operator, as stated in the report, was new to his place, but he is said to have had a good record in his previous position. His misconduct appears to have been of a kind, however, which experience alone affords no security against. The same may be said of the act of the conductor. This man was the oldest conductor on that division of the railroad.

The total number of collisions and derailments was 2,831 (1,650 collisions and 1,181 derailments), of which 291 collisions and 125 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,491,046,

namely: January, \$894,639; February, \$723,614; March, \$872,793. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Num-ber.	Loss.	Persons killed.	Persons injured.
Collisions:				
Rear	550	\$544,197	111	635
Butting	262	539,374	56	647
Trains separating	716	315,274	34	286
Miscellaneous	122	87,668	10	214
Total	1,650	1,486,513	211	1,782
Derailments:				
Due to defects of roadway, etc	245	200,734	20	304
Due to defects of equipment	449	335,221	4	85
Due to negligence of trainmen, signalmen, etc	80	62,976	5	95
Due to unforeseen obstruction, etc	69	74,329	20	78
Due to malicious obstruction of track, etc	16	54,043	9	44
Due to other causes	322	277,230	17	176
Total	1,181	1,004,533	75	782
Total collisions and derailments	2,831	2,491,046	286	2,564

In the table following ("Class A" accidents), the number of items, thirty-four, is the same as in the table for the quarter last preceding, but the losses, both of life and of property, are larger. Besides the three notable cases already mentioned, a number of others show details which are of particular interest. In Items 1, 4, 8, 12, 13, and 29, misconduct or negligence is chargeable to men lacking in experience; in Items 1 and 6, the man or men at fault had been on duty an excessive number of hours, and in Items 10, 11, 19, 20, 22, 24, 28, 29, and 30, collisions are reported in consequence of errors which in all probability could not have occurred had the block system been in use.

One of the most complicated difficulties found in running trains without the block system is illustrated in the case of the collision shown in Item 3. The report of this collision says, concerning the cause:

Train No. 3, south bound, ran into rear of train No. 203, south bound, badly damaging the engine of No. 3 and a business car on rear of train No. 203. Accident was caused by improper flagging and lack of precaution on part of the train dispatcher. Both trains were moving at the time of the collision, No. 203 running at a speed estimated at 35 to 40 miles an hour, and No. 3 at 50 miles an hour. No. 203, with nine cars, was delayed and fell back on the time of train No. 3. The latter train had five cars. Both trains are of the same class, and rules permit a delayed train, when falling back on the time of a train of the same class, to proceed on its own schedule until overtaken. No. 203 left the initial point on the district twenty-two minutes in advance of No. 3, but on account of having a heavier train and some trouble with a hot driving box on the engine, and being delayed by a freight train, No. 3 gradually gained on it. The trains passed the last open telegraph office north of the point of collision, seven minutes apart. There was a dense fog prevailing at the time and the conductor and flagman of No. 203 failed to use the necessary precaution; they neglected to drop off a fusee; neither did the dispatcher on duty notify the conductor and engineman of No. 3 that they were closing up on the train ahead.

Causes of thirty-four prominent train accidents (Class A).

[NOTE.—R. stands for rear collision; B., battling collision; M., miscellaneous collisions; D., derailment; P., passenger train; F., freight and miscellaneous trains.]

						Damage to en- gines, cars, and road- way.	Cause.
1	66	R.	F. and F.	1	0	\$286	The foremost train had been stopped because of a hot journal, was not protected by flag; this train had started from the last preceding station without the conductor and without the rear brakeman; engineman who ran without conductor has 8 months' experience, flagman 7 months; all on duty 19 hours 10 minutes.
2	7	R.	P. and F.	7	7	1,700	A passenger train ran into a freight; personal injuries aggravated by fire in stoves in cars. A brakeman neglected to flag passenger train, had been a train brakeman 16 months.
3	2	R.	P. and F.	0	2	2,000	Occurred at 4 a. m.; dense fog, train of 9 cars traveling at about 35 or 40 miles an hour was run into, at the rear, by train of 5 cars running 60 miles an hour; time interval at telegraph station, 8 miles back, was 7 minutes; flagman did not drop off fuses; dispatcher of 6 months' experience did not notify second train that it was near to the first.
4	40	R.	F. and F.	2	2	2,000	On steep descending grade; train eluded control, engineman at fault was killed; his experience, 4 months; conductor's, 2 years; three brakemen's, 16 months, 15 months, and 9 months, respectively.
5	9	R.	F. and F.	12	14	2,500	Foremost train was pushing a rotary snowplow; men killed were shovelers riding in freight car behind engine of second train. Snowplow train did not signal by torpedoes or fuses, and had not given suitable notice to following train.
6	39	R.	F. and F.	0	0	2,500	Brakeman failed to flag; had been on duty 23 hours 35 minutes.
7	10	R.	F. and F.	2	0	2,800	Occurred 3 a. m.; engineman at fault (who was killed) appears to have been asleep; the fireman also was killed.
8	4	R.	P. and F.	4	3	3,085	Occurred 4 a. m.; passenger train ran into two locomotives coupled together, clear block signal wrongfully given. Signalman's attention being momentarily withdrawn from his signal levers, a messenger boy, without authority, cleared the signal. Signalman's age, 19 years 10 months.
9	33	D.	F.	2	2	4,000	Train ran away (3 miles) on 2.5 per cent grade, excessive braking caused whole train of 17 cars to slip; only 6 cars air-braked.
10	61	B.	P. and F.	0	2	4,550	A freight train was placed on a side track and kept there 9 hours 15 minutes to give opportunity to crew to rest. At the end of this period they started out, after passenger train No. 1 had passed, "thinking" No. 5 also had passed, and collided with No. 5. Conductor and engineman did not confer directly, but through a brakeman, and a misunderstanding arose as to identity of the respective passenger trains.
11	38	R.	F. and F.	2	15	5,500	Occurred 2 a. m., dense fog; by special order the prescribed time interval had been lengthened from 5 minutes to 15 minutes, but in a distance of 9 miles a freight traveling 20 to 40 miles an hour overtook another freight traveling about 10 miles an hour.
12	44	B.	F. and F.	0	2	5,600	North-bound train ran past the meeting point; conductor is reported as having only one year's experience in train work and only 7 months' as conductor. Engineman's experience, as such, reported as 8 days.
13	17	D.	P. and F.	0	4	5,700	Freight train was on main track, unprotected, when passenger was due; experience of conductor, 3½ months; of engineman, 3 months.
14	12	R.	F. and F.	1	1	6,163	Permissive block signaling; empty engine ran into derrick car standing at water station; engineman of empty engine looked beyond standing train and saw and acted on the clear signal for the next block section.
15	1	R.	P. and F.	23	25	7,000	Collision on long tangent; night, engineman, running very fast, disregarded distant and home block signals, also three red lanterns at different points. This engineman was killed. His eyesight was perfect one year before the accident. The road has no periodical examination or test of enginemen. (See page 4.)
16	3	R.	P. and F.	3	14	7,400	Collision occurred 667 feet beyond block signal, engineman approached this signal too fast and failed to see it soon enough, the arm being obscured by snow and steam; rails were frosty.

Causes of thirty-four prominent train accidents (Class A)—Continued.

Item.	Record No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Cause.
17	29	D.	F -----	0	0	8,350	Broken flange; indication of an old defect; speed 20 to 30 miles an hour; rated capacity of car 70,000 pounds; contained 77,800 pounds.
18	24	M.	F -----	0	0	8,682	Train broke in two; rear portion ran into the forward portion; 74 cars in train; 23 cars air-braked.
19	5	R.	F. and P ----	0	3	9,200	Light engine ran into rear of passenger train standing at station; sleeping car destroyed; had been running too fast, shortening time interval from 10 minutes to 7 minutes; approached station not under control; engineman suspended 30 days.
20	47	B.	P. and F ----	2	2	9,510	Occurred 7 p. m.; men on passenger train failed to identify freight train standing on side track; engineman and fireman of passenger train killed; conductor, baggageman, and brakeman saw on side track engine No. 168, but say that they thought it was 169.
21	27	D.	P -----	0	0	10,000	Supposed loose guard rail.
22	22	B.	P. and F ----	5	0	10,400	Engineman of empty engine overlooked passenger train on time-table; this man was killed.
23	70	D.	F -----	0	0	10,450	Broken flange.
24	15	B.	P. and P ----	1	1	11,718	Conductor and engineman of west-bound train "overlooked" east-bound. Both men of experience with fair records.
25	46	D.	F -----	0	0	14,000	Broken arch bar in truck.
26	67	D.	P -----	0	15	14,100	Defective switch rod; damage mostly from fire.
27	31	D.	P -----	2	1	14,500	Washout; drift jam in river; watchman passed along the road 3 hours before accident.
28	76	B.	P. and F ----	2	19	15,000	Engineman of empty engine disregarded telegraphic order; this man was killed.
29	19	B.	F. and F ----	0	2	16,496	Conductor and engineman east bound overlooked telegraphic order; conductor's experience, 2 months, but with good record as brakeman.
30	18	B.	P. and F ----	2	21	17,000	Conductor and engineman of freight overlooked passenger train; engineman was killed.
31	32	D.	P -----	0	6	19,100	Occurred at 1 a. m.; switch maliciously misplaced; lamp fixed so as to indicate all right.
32	53	R.	P. and P ----	3	13	33,892	Engineman failed to observe signals and to control speed.
33	41	B.	P. and F ----	4	9	37,900	Night; west-bound passenger train ran 6 miles on east-bound track; signalman at west end of this section had permitted freight to start eastward; appears to have given this clear signal when he set up the route through cross-over for expected passenger train. Signalman's age, 25 years; experience, 2 years.
34	16	B.	P. and P ----	8	30	79,450	Occurred 3 a. m.; operator failed to deliver a telegraphic order; operator's experience at this place, 2 months; elsewhere, 5 years; conductor (with good record) also disregarded rule. See page 5.
Total...				88	275	402,541	

TABLE NO. 3.—*Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.		Conductors.		Brakemen, etc.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.) preventing quick work			1	11		
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism)		2		66		
3	Other causes, apparently due to defective coupler mechanism		1	2	8		
4	Defective draft gear (with automatic coupler)				4		
5	Coupling to an engine or tender				16		
6	Same (with link-and-pin coupler)				8		
7	Coupling on inside of sharp curve		3	1	28		
8	Foot caught in or between couplers while adjusting coupler		2		80		
9	Slipped (usually on ice or snow)		3	3	81		
10	Foot caught in frog, guard rail, or switch		1	8	7		
11	Caught by overhanging load (on platform car)				9		
12	Load shifted				7		
13	Engaged in operations preliminary to coupling	3	2	20	99	1	2
14	While coupling safety chains		2	1	8		1
15	Link-and-pin coupler		2		18		1
16	Link and pin, with automatic		1		9		
17	Coupling damaged cars (presumably an unavoidable risk)		1	7	12		
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism)		3	1	44		
19	Uncoupling, other causes	1	3	3	102		1
20	Miscellaneous		6	4	126		1
21	Not clearly explained		3	19	53	1	3
Total		4	35	70	691	2	9

TABLE NO. 4.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Conductors.		Brakemen, etc.		Engine-men.		Firemen.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—										
	1 Defect in car				7						
	2 Ice or snow		2	3	41	1	2				4
	3 Parting of train			4	22				3		
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3		7	11	131				4	1	7
	5 While setting brakes		3	9	96					1	1
	Fell from—										
	6 Coal car			3	12						
	7 Freight car other than box or coal car		2	1	2						1
	8 Engine or tender		2	12	77	1	10	1	45		3
C7	9 Passenger car				2						1
	10 Engines, tenders, or cars (all kinds) not in motion	2	3	5	74		23	2	72		16
	11 Miscellaneous causes		7	15	136				1	1	26
	12 Not clearly explained	2	6	34	100					1	6
	13 Slipped getting on moving trains or cars	1	18	12	154		1		1	7	18
	14 Jumping off moving trains		30	9	327				1	1	35
	15 Jumping from engines or cars anticipating collision, derailment, or other accident		4		27		10		17		9
	16 Fell from engines or cars by reason of defective handholds and sill steps		2		47						1
	17 Getting on or off moving engine	1	18	13	303		45		62	1	33
	18 Caught in frog, guard rail, or switch				3						
Total		6	104	131	1,561	2	91	3	206	13	161

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 8, 1901.

RECEIVED
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U.S. DEPT. OF COMMERCE
BUREAU OF ACCIDENT INVESTIGATION

ACCIDENT BULLETIN,

No. 8,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS

DURING

APRIL, MAY, AND JUNE, 1903,

WITH

TABLES FOR THE YEAR ENDING JUNE 30, 1903.

u. s. d. c.

INTERSTATE COMMERCE COMMISSION,

WASHINGTON, D. C.

WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1903.

ACCIDENT BULLETIN,

No. 8.

APRIL, MAY, AND JUNE, 1903,

AND THE

YEAR ENDING JUNE 30, 1903.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1903.

THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 8.

RAILROAD ACCIDENTS IN THE UNITED STATES,

DURING THE

THREE MONTHS ENDING JUNE 30, 1903.

The number of persons killed in train accidents during the months of April, May, and June, 1903, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 230, and of injured 2,629. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 12,305 (844 killed and 11,461 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE No. 1.—*Casualties to persons—April, May, and June, 1903.*

	Passen- gers.		Trainmen.		Other persons employed on or around trains.		Switch tenders, crossing tenders, watch- men.		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	22	541	93	734	4	65	1	9	24	111	122	919
Derailments	7	446	56	383	3	36	0	3	6	17	65	489
Miscellaneous train accidents (excluding the above), in- cluding locomotive-boiler ex- plosions.....	2	20	10	242	1	4	0	4	1	14	12	264
Total train accidents	31	1,007	159	1,359	8	105	1	16	31	142	199	1,622
Coupling or uncoupling cars....	0	0	52	653	1	8	7	83	2	12	62	756
While doing other work about trains or while attending switches	0	0	24	977	2	38	3	55	8	145	87	1,215
Coming in contact with over- head bridges, structures at side of track, etc.....	0	7	20	208	0	3	0	16	0	6	20	233
Falling from cars or engines, or while getting on or off.....	23	308	135	1,684	0	39	6	90	32	181	173	1,994
Other causes	10	299	84	1,149	10	70	27	73	168	2,728	289	4,020
Total (other than train accidents)	33	614	315	4,671	13	158	43	317	210	3,072	581	8,218
Total all classes.....	64	1,621	474	6,030	21	263	44	333	241	3,214	780	9,840

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident, are not reported. The items in the column headed "Switch tenders, crossing tenders, and watchmen," include switch tenders (not acting as brakemen), lever men, and lamp men, track, bridge, and crossing watchmen, and policemen.

The total number of passengers and employees killed in this quarter, 844, is 83 less than in the quarter last preceding, and the number killed in train accidents, 230, as against 300, shows a still more gratifying decrease; but it is necessary, nevertheless, to record in the present report 23 fatalities as due to three butting collisions. The number of employees killed in coupling and uncoupling cars, 62, is 14 less than in the preceding quarter.

The total number of collisions and derailments was 2,605 (1,403 collisions and 1,202 derailments), of which 201 collisions and 126 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,476,934, namely; April, \$810,272; May, \$852,379; June, \$814,283. Given more in detail, these facts appear as below:

TABLE No. 2.—*April, May, and June, 1903.*

	Num- ber.	Loss.	Persons killed.	Persons injured.
Collisions:				
Rear	381	\$340,729	24	408
Butting	258	598,728	79	616
Trains separating	225	109,573	10	60
Miscellaneous	539	328,423	31	376
Total.....	1,403	1,377,453	144	1,460
Derailments:				
Due to defect of roadway, etc.....	201	137,101	7	164
Due to defect of equipment.....	537	458,739	6	107
Due to negligence of trainmen, signalmen, etc.....	62	44,305	4	78
Due to unforeseen obstruction, etc.....	64	86,922	16	152
Due to malicious obstruction of track, etc.....	20	52,542	4	81
Due to other causes.....	318	320,597	35	303
Total.....	1,202	1,100,206	72	885
Total collisions and derailments.....	2,605	2,477,659	216	2,345

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not included.

The list of "Class A" accidents given below is made up on the same basis as in preceding bulletins.^a The three butting collisions already referred to are Nos. 25, 43, and 5; items 7, 39, and 43. In the case of the most costly one, No. 5, both the flagging system and the block system were employed as safeguards, but both failed or were not properly managed. The other two cases may be called typical of a large number, and their causes as reported are given below. These cases are called typical for the reason, among others, that the elements of the cause are complicated or obscure, or both complicated and obscure; but in No. 25 attention should be called to an element which is rather unusual—the failure of the hand-motion signal. The con-

^a "Class A" includes (1) all accidents in which the damage is reported at \$10,000 or over, (2) notable cases in which passengers are killed, and (3) cases doing damage less than \$10,000, and down to \$2,000, wherever the circumstances or the cause may be of particular interest.

ductor gave a signal intended to mean "stop," but it was taken by the engineman to mean "go ahead," a fact which indicates either a bad code of signals or great carelessness in giving the signals.

No. 25.—The negligence of the conductor and engineman who caused this collision is described in the report made by the company, as follows:

The stations on this part of the road from west to east are V, M, S, B, etc. The collision occurred a short distance east of M. Train No. 2, east bound, was delayed about two hours at V. During this time the operator at M received, for train No. 2, three orders—one about 8 o'clock directing No. 2 to meet No. 3 at B; one about 10 o'clock, superseding the first, making the meeting point at S; one at 10.43 o'clock, superseding the second, making the meeting point at M instead of S. This last order was different from the other two in that it read, at the end, "Train No. 2 gets this order at M." Conductor of train No. 2 says he read and understood the three orders when received, and handed the copies to the engineer, simply saying "S ——" (the name of the place mentioned in second order), which is the first station east of M, he having mistaken the second order for the last. The engineer failed to read the orders to the conductor to see that the conductor and himself understood them alike, as required by the rule. After the train started the conductor looked at his orders again, discovered his mistake, and signaled with the air signal to stop; then went out on car platform and gave stop signal with his hand, which the engineer took for signal to go ahead and proceeded at full speed. Before conductor could get to valve to set air brake the collision occurred. Both trains were running at the rate of about 30 miles an hour.

No. 43.—This collision occurred at X. The freight train received an order at W, 17 miles east of point of accident, at 1.47 a. m., to the effect that *second* No. 2 would run one hour and thirty minutes late. The railroad company's report says:

As the entire crew on the head end of the train were killed outright we have no means of ascertaining their understanding of the order, but the conductor, and no doubt the engineman likewise, read the order as *No. 2* instead of *second No. 2*. As a safeguard against errors of this nature, the rules require the conductor to show his orders to the flagman and the engineman to the fireman, who are required to read, understand, and keep them in mind. In this instance the conductor failed to fulfill the requirements of this rule, as he did not show the order to the flagman. The indications are that the engineman was also derelict in this respect. The flagman was on the engine at the first station east of X (8 miles) and asked the engineman what orders he had. The engineman replied, "One hour and thirty minutes on No. 2." This answer was made in the presence and hearing of the fireman and head brakeman, so it is evident neither of these men had seen the order, as it is fair to assume they would have corrected the engineman.

On returning to the caboose the flagman made inquiry of the conductor regarding the orders, and was informed identically the same as he had been by the engineman, to the effect they had one hour and thirty minutes on *No. 2*.

How these men came to make such an error is beyond human understanding. The order was clear and simple, plainly written, and the usual standard form of "run-late" order. The conductor was unable to offer any explanation of how he came to be misled. The only solution is that possibly the engineman and conductor had been figuring where they would go for No. 2 and, on receiving the order, their minds were so concentrated on No. 2 that they were not impressed with the word

Causes of forty-three prominent train accidents (Class A)—Continued.

Item.	Record No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Cause.
16	42	B	P. and P....	0	45	90,000	Operator gave conductor clearance card and neglected to give him telegraphic order; operator's experience (at this place), 8 months.
17	18	D	P	2	5	9,638	Occurred 3 a. m. Misplaced switch; switch left in wrong position by brakeman of freight. Before the derailment a passenger train had run through the switch in the opposite (trailing) direction with switch light showing red.
18	50	B	F. and F....	3	1	9,775	Engineman of light engine forgot regular train; he was killed.
19	40	D	P	0	84	10,835	Unknown. Track of 80-pound rails, rock ballast, in good condition; curvature, 24°; speed, 35 miles an hour.
20	39	D	P	2	12	10,400	Unknown.
21	4	B	P. and F....	2	15	10,600	Conductor and engineman of freight misread telegraphic order. It read "2d 26," and they read it "26."
22	7	B	F. and F....	2	10	10,900	Station agent (32 years' experience) failed to deliver telegraphic order. Signal stands normally in "stop" position; agent cleared it with order lying before him on desk.
23	45	B	P. and P....	9	18	11,444	Pilot forgot meeting order; no other person on train acquainted with road.
24	54	M	F. and F....	0	0	11,969	Runaway of 26 cars of ore; cars, detached from engine, had been left unattended; hand brakes set on 10 cars; air in air-brake cylinders leaked out.
25	49	B	F. and F....	0	9	12,300	Operator neglected to deliver telegraphic order.
26	55	M	F	0	0	12,800	Train broke in two; cars much damaged by automatic setting of brakes.
27	22	D	P	0	14	18,600	Deraillment due to some part of engine or car dropping to the roadbed.
28	27	B	F. and F....	1	5	14,200	Engineman, north bound, started from station on time of south bound; was "under the impression" that he was to meet south-bound train at a station farther on.
29	31	M	P. and F....	1	28	14,250	Passenger train struck by unattended light engine; it is believed that the engine had been started by a certain brakeman, who soon after disappeared.
30	16	D	P	5	2	14,251	Broken rail; rail, 67-pound, not badly worn; curvature, 4°; speed, 35 miles an hour; general condition of track, good; weight on engine driving wheels, 100,000 pounds.
31	61	D	P	1	9	14,800	Loosened switch; switch believed to have been maliciously tampered with.
32	57	D	F	0	0	15,000	Broken flange.
33	6	B	P. and F....	3	4	15,055	Passenger train was several hours late; conductor and engineman of switching crew, who had been at work at a rolling mill all day, entered main line at 7 p. m. without examining register; engineman "thought" he had heard the passenger train pass.
34	65	D	F	0	3	16,800	Unknown.
35	46	B	P. and F....	0	7	17,800	Conductor and engineman of north-bound freight calculated to meet south-bound passenger train No. 7 at A, but at A they received an order against another south-bound train and thereupon started out, forgetting train No. 7.
36	62	D	F	0	0	11,400	Unknown.
37	32	M	P	1	8	25,000	Occurred at 11 p. m. Passenger train struck car which had been blown out of side track by high wind.
38	13	M	P	0	1	25,900	Passenger train ran into officers' car which had been carelessly pushed from side track on to main line. Fire set by heater in officers' car.
39	43	B	P. and F....	7	7	29,400	Occurred 3 a. m. Trains running at full speed; conductor and engineman of freight had an order concerning "2d No. 2," but read it "No. 2."
40	67	D	F	0	0	29,772	Runaway of 78 loaded cars. Cars had been left at 5 p. m. with hand brakes set on 30 of them; runaway occurred next morning at 4 o'clock; brakes must have been released by some person or persons unknown.
41	30	B	F. and F....	7	2	31,000	Operator fell asleep and failed to deliver telegraphic order; conductor and engineman neglected to ask for clearance card.

Causes of forty-three prominent train accidents (Class A)—Continued.

Item.	Record No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Cause.
42	24	B	P. and P....	2	45	\$32,000	Engineman, south bound, misread telegraphic order; conductor neglected to have order read aloud in his presence by engineman.
43	5	B	P. and F....	7	14	73,000	Occurred 3 a. m. East-bound passenger collided with side of a west-bound freight which was entering side track; brakeman of freight had gone forward with red light, but passenger engineman did not see this signal; block signalman in tower a short distance west of point of collision reported that freight had cleared main track when, by reason of darkness, fog, and distance, he did not know. Signalman's experience, 1 year.
Total .				69	421	581,234	-

Items 3, 5, and 13 in Class A represent cases due to failure to observe block signals or to "failure in block working." In items 2, 8, and 41 men fell asleep on duty, and item 33 brings out a kind of carelessness which has not before appeared in the records.

In view of the prominence of butting collisions in the quarter under review a second table has been prepared (see below) showing all of this class of accidents (regardless of the cost limit) which are reported as due to mistakes of conductors and enginemen in reading orders or to forgetting orders; mistakes of telegraph operators and train dispatchers in writing, transmitting, or delivering orders, and mistakes of conductors and enginemen in regard to the right to the track. "Overlooked a train" means that in reading the time-table the schedule of a train—a column of figures—was overlooked. Sometimes this explanation appears to be given when the true explanation would be that the person at fault trusted to memory and did not examine the time-table. Where "Conductor and engineman forgot" a train or an order it is evident that they did not cooperate in their duties, as is everywhere required by the regulations; but in some of the cases where an engineman alone forgot, the engine was being run without a train and the engineman alone was charged with the responsibility of keeping out of the way of other trains. This table contains 36 items; deaths, 33; injuries, 260.

Butting collisions caused by mistakes in connection with time-tables or telegraphic orders.

APRIL.

Reference to table, Class A. Item—	Number.	Kind of train.	Killed.	Injured.	Cost.	Cause.
132	4	P. and F.....	2	15	\$10,000	See Class A.
133	7	F. and F.....	2	10	10,900	Do.
134	8	F. and F.....	0	1	5,894	Do.
135	10	F. and F.....	0	0	5,000	Do.
136	11	F. and F.....	1	3	8,000	Engineman forgot order.
137	66	P. and F.....	0	2	4,984	Engineman overlooked passenger train.
138	67	P. and F.....	0	8	3,800	Conductor and engineman took wrong about passenger train.
139	68	F. and F.....	0	4	3,500	Operator failed to deliver order. Discharged. Dispatcher dismissed for not taking all precautions.
140	69	F. and F.....	0	2	1,000	Dispatcher gave wrong engine number as an order.
141	70	F. and F.....	0	1	3,900	Operator left signal clear and went to dinner. Train passed while he was absent.
142	71	F. and F.....	1	0	1,010	Conductor and engineman east bound overlooked west-bound train.

MAY.

42	24	P. and P.....	2	45	\$32,000	See Class A.
7	25	P. and P.....	2	33	4,000	Do.
143	26	P. and F.....	0	4	8,741	Operator failed to deliver order. operator's experience at this place, 3 months.
144	27	F. and F.....	1	5	14,200	See Class A.
145	28	F. and F.....	0	3	6,900	Do.
146	29	F. and F.....	0	6	8,500	Do.
147	72	P. and F.....	0	0	1,481	Conductor and engineman of freight overlooked passenger train.
148	73	P. and F.....	0	2	1,700	Engineman overlooked passenger train.
149	74	P. and F.....	0	1	250	Operator repeated order incorrectly; dispatcher failed to detect error.
150	75	P. and F.....	0	5	300	Order incorrectly copied and not delivered.
151	76	F. and F.....	0	4	1,550	Agent, 30 years' experience, failed to deliver order his first failure of this kind.
152	77	F. and F.....	0	0	400	Conductor and engineman overlooked meeting order.
153	78	F. and F.....	0	4	2,700	Misunderstanding of order.
154	79	F. and F.....	0	3	3,100	Operator copied order incorrectly.

JUNE.

16	42	P. and P.....	0	45	\$0,000	In Class A.
39	43	P. and F.....	7	7	29,400	Do.
23	45	P. and P.....	9	18	11,444	Do.
35	46	P. and F.....	0	7	17,800	Do.
155	47	F. and F.....	1	5	5,000	Unexplained.
25	49	F. and F.....	0	9	12,300	In Class A.
18	50	F. and F.....	3	1	9,775	
156	80	F. and F.....	0	0	700	Engineman misunderstood order.
157	81	F. and F.....	1	3	2,485	Conductor and engineman overlooked order.
158	82	F. and F.....	1	4	3,600	Conductor and engineman failed to identify a train that was met.
159	83	F. and F.....	0	0	1,100	Operator failed to deliver order. (Operator in service 6 months.)

TABLE NO. 3.—Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.

Sub-class.	Causes.	Conductors.		Brakemen, etc.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.), preventing quick work.....		2		18		
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism).....				29		
3	Other causes, apparently due to defective uncoupling mechanism.....				9		
4	Defective draft gear, with automatic coupler.....			1	2		2
5	Coupling to an engine or tender.....		1	1	27		
6	Same (with link-and-pin coupler).....				9		
7	Coupling on inside of sharp curve.....		1	1	35		
8	Foot caught in or between couplers while adjusting coupler.....		1		34		
9	Slipped, usually on ice or snow.....			2	18		
10	Foot caught in frog, guard rail, or switch.....	1	2	6	7	1	
11	Caught by overhanging load (on platform car).....			2	18		
12	Load shifted.....				1		
13	Engaged in operations preliminary to coupling.....	1	7	10	118		2
14	While coupling safety chains.....		2	1	14		
15	Link-and-pin-coupler.....		1		17		
16	Link and pin, with automatic.....	1			9		
17	Coupling damaged cars (presumably an unavoidable risk).....	2	3	8	23	1	
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism).....		2		65		
19	Uncoupling, other causes.....		12	5	126		3
20	Miscellaneous.....		5	6	96		4
21	Not clearly explained.....		2	12	33		1
	Total.....	5	41	55	703	2	12

TABLE NO. 4.—Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Sub-class.	Causes.	Conduc-tors.		Brake-men, etc.		Engine-men.		Firemen.		Other em- ployees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—										
	1 Defect in car.....			1	5						
	2 Ice or snow.....				1						
	3 Parting of train.....				15						1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 8.....		12	14	179			3	11	15	
	5 While setting brakes.....	1	2	1	79						
	Fell from—										
	6 Coal car.....				3		1				
	7 Freight car other than box or coal car.....	1			1					1	
	8 Engine or tender.....		5	11	68	2	7	10	39		5
	9 Passenger car.....				3						
C7	10 Engines, tenders, or cars (all kinds) not in motion.....		4	1	84		7	1	53	2	21
	11 Miscellaneous causes.....		5	8	184					1	23
	12 Not clearly explained.....	5	2	50	56			1			3
	13 Slipped getting on moving trains or cars.....	1	27	9	178					10	41
	14 Jumping off moving trains.....	2	24	7	257				1	4	43
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	1	2	1	29		8		14		4
	16 Fell from engines or cars by reason of defective handholds and sill steps.....		3		70		1				1
	17 Getting on or off moving engine.....	2	21	10	270		34		56	3	24
	18 Caught in frog, guard rail, or switch.....			1							
	Total.....	13	107	114	1,482	2	58	12	166	32	181

YEARLY TABLES.

This bulletin completes the publication of the accident records under the law of March 3, 1901, for two years, and the following table (A) gives the aggregate, for the year ending June 30, 1903, of the items which are given in Table No. 1 of the quarterly returns. The total number of casualties shown in Table A is 49,531 (3,554 killed and 45,977 injured).

TABLE A.—Summary of casualties to persons, year ending June 30, 1903.

	Passen- gers.		Trainmen.		Other persons employed on or around trains.		Switch tenders, crossing tenders, watch- men.		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	118	2,891	451	3,079	34	309	9	48	67	345	561	3,781
Derailments	44	1,456	225	1,386	16	157	1	26	22	115	264	1,714
Miscellaneous train accidents (excluding the above), in- cluding locomotive-boiler ex- plosions	2	75	65	882	1	11	1	11	3	41	70	945
Total train accidents	164	4,424	741	5,347	51	507	11	85	92	501	895	6,440
Coupling and uncoupling cars .. While doing other work about trains, or while attending switches			213	2,437	5	29	28	287	7	35	253	2,788
Coming in contact with over- head bridges, structures at side of track, etc			103	4,474	11	198	16	236	19	625	149	5,538
Falling from cars or engines, or while getting on or off	4	32	84	886		14	4	59	5	24	93	992
Other causes	119	1,335	521	6,829	18	142	34	414	105	640	678	8,025
Total (other than train accidents)	34	1,182	359	4,628	32	310	121	340	653	9,943	1,165	15,221
Total (all classes)	157	2,549	1,280	19,263	66	688	203	1,336	789	11,277	2,338	32,564
	321	6,973	2,021	24,610	117	1,195	214	1,421	881	11,778	3,233	39,004

In Table B, following, comparisons may be made of the totals of the principal classes of casualties. For the large increase in the totals and in nearly all of the items an explanation is to be found in the well-known and widespread increase of railroad traffic which has taken place and which has been made apparent by the published reports of railroad earnings. This tendency was remarked upon in Accident Bulletin No. 5, the first for the fiscal year now under review. It is also to be noted that the course pursued by the Commission in insisting on full reports of all accidents has been productive of good results, and, as noted in Bulletin No. 6, railroad companies are much more careful to include *all* accidents in their reports to the Commission than they were when the law requiring reports of accidents went into effect. There has been a steady and continuous improvement in this respect, and it is undoubtedly true that much of the increase shown in the above comparative summary is due to the fact that accidents are now much more fully reported than they were during the preceding year.

withstanding this great increase, it is gratifying to note that the list of fatal accidents to passengers in train accidents is no larger than last year. The only other item which does not show an increase is "overhead obstructions." It is not unlikely that the decrease in this class of accidents has been brought about by the increased use of air brakes, doing away, to some extent, with the necessity of requiring trainmen to ride on the tops of box cars.

In advance of the annual reports it appears that the number of men employed in the train service on June 30, 1903, was about 12 per cent larger than on June 30, 1902. This is the total for the whole country. On the roads of densest traffic, where the liability to accident is greater than on roads of light traffic, the increase has been more than 12 per cent. The enormous expansion of freight traffic has led to the employment of new men so rapidly that the percentage of inexperienced men in the service was in the year under review larger than before for many years.

TABLE B.—*Casualties to passengers and employees, years ending June 30, 1902 and 1903.*

	1903.		1902.	
	Killed.	Injured.	Killed.	Injured.
Passengers:				
In train accidents	164	4,424	167	3,586
Other causes	157	2,549	136	2,503
Total	321	6,973	303	6,089
Employees:				
In train accidents	895	6,440	697	5,046
In coupling accidents	253	2,788	143	2,113
Overhead obstructions, etc	93	992	104	1,070
Falling from cars, etc	678	8,025	537	6,867
Other causes	1,314	20,759	1,035	18,615
Total	3,233	39,004	2,516	33,711
Total passengers and employees	3,554	45,977	2,819	39,800

The following tables, C, D, and E, show, respectively, for twelve months, the facts which appear in tables 2, 3, and 4 of the quarterly returns.

TABLE C.—*Collisions and derailments; damage to cars, engines, and roadway, year ending June 30.*

	1903.		1902.	
	Number.	Loss.	Number.	Loss.
Collisions:				
Due to trains separating	948	\$487,530	774	\$391,489
Other causes	5,219	5,128,216	4,268	3,894,194
Total	6,167	5,615,746	5,042	4,285,683
Derailments:				
Due to defects of roadway, etc	821	636,718	547	443,706
Due to defects of equipment	1,841	1,502,325	1,609	1,295,299
Due to negligence of trainmen, signalmen, etc	297	230,907	255	196,241
Due to unforeseen obstructions, etc	277	317,456	239	546,478
Due to malicious obstruction of track, etc	71	157,290	57	63,246
Due to other causes	1,169	1,136,535	928	874,753
Total	4,476	3,981,231	3,633	3,359,728
Total collisions and derailments	10,643	9,596,977	8,675	7,645,406

TABLE D.—*Causes of accidents to employees in coupling and uncoupling cars, year ending June 30, 1903.*

Sub-class.		Conductors.		Brakemen, etc.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.) preventing quick work.....		2	3	68		
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism).....		5		205		
3	Other causes, apparently due to defective coupler mechanism.....		1	2	45		
4	Defective draft gear (with automatic coupler).....			1	15		2
5	Coupling to an engine or tender.....		1	2	85		
6	Coupling to an engine or tender (with link-and-pin coupler).....				20		
7	Coupling on inside of sharp curve.....		7	7	118		
8	Foot caught in or between couplers while adjusting coupler.....		3		127		
9	Slipped (usually on ice or snow).....		4	9	89		
10	Foot caught in frog, guard rail, or switch.....	2	3	23	28	1	
11	Caught by overhanging load (on platform car).....		1	6	31		
12	Load shifted.....		1		13		
13	Engaged in operations preliminary to coupling.....	5	12	54	373	3	5
14	While coupling safety chains.....		6	6	39	1	1
15	Link-and-pin coupler.....		3	2	98		1
16	Link and pin, with automatic.....	1	2		358		
17	Coupling damaged cars (presumably an unavoidable risk).....	2	4	19	63	1	
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism).....		9	5	179		
19	Uncoupling, other causes.....	1	15	9	239		6
20	Miscellaneous.....		21	32	572		16
21	Not clearly explained.....		10	55	200	1	5
Total.....		11	110	235	2,642	7	36

TABLE E.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines, year ending June 30, 1903.*

Sub-class.	Causes.	Conductors.		Brakemen, etc.		Enginemmen.		Firemen.		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—										
	1 Defect in car.....			1	33						1
	2 Ice or snow.....		3	5	68	1	2				5
	3 Parting of train.....		3	8	76				7		1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	1	32	38	596		3		14	19	45
	5 While setting brakes.....	1	16	23	352					1	2
	Fell from—										
	6 Coal car.....		2	3	29		1				1
	7 Freight car other than box or coal car.....	1	3	2	17					1	6
	8 Engine or tender.....	1	18	41	286	5	39	22	166	2	11
	9 Passenger car.....		2	1	9						4
C7	10 Engines, tenders, or cars (all kinds) not in motion.....	2	13	10	299	3	68	5	222	3	53
	11 Miscellaneous causes.....	2	33	65	834		1		3	12	142
	12 Not clearly explained.....	12	17	185	300			4	4	11	21
	13 Slipped getting on moving trains or cars.....	2	80	35	596		4		4	30	105
	14 Jumping off moving trains.....	2	114	23	1,066		3		6	12	181
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	1	9	1	102		33		57		15
	16 Fell from engines or cars by reason of defective handholds and sill steps.....		15	3	234		1		2		2
	17 Getting on or off moving engine.....	6	75	54	1,026	1	161	2	222	14	90
	18 Caught in frog, guard rail, or switch.....			1	9						
Total.....		31	435	499	5,932	10	316	33	707	105	635

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to causes (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the most serious collisions in that quarter, 57 passengers having been killed. There are notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties: 4 killed, 126 injured, due to operating trains in which air brakes were used on only a portion of the cars; and the danger of running trains partially air-braked is commented on.

Bulletin No. 2 contains a detailed list showing the cost and causes of the 27 most serious butting collisions in that quarter. In these collisions 70 persons were killed and 234 were injured, and the damage to cars, engines, and roadway amounted to \$306,511. The incompleteness of the statements of causes, as sent in by the railroads, is commented on.

Bulletin No. 3 contains a list similar to that just mentioned, but showing rear instead of butting collisions. As in the first list, only the most serious accidents are considered; and of these there were 41, costing \$160,247. The number of persons killed was 43, and of injured 255.

Bulletin No. 4 contains a third list of collisions, this one including all classes; but it includes only a few in which the damage was less than \$5,000. The totals of this list are: Killed, 30; injured, 187; cost, \$228,597. Collisions occurring where the trainmen had worked very long hours are commented on. In this bulletin a table is given showing the deaths and injuries due to trains parting. The aggregate of damage shown in this table is \$492,781; persons killed, 14; injured, 386. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table of the most serious train accidents in the quarter. Derailments as well as collisions are included, but cases causing damages of less than \$10,000 each are not included, except where the cause of the accident calls for notice. The 23 accidents shown in this table killed 81 persons and injured 356, and the aggregate damage reported was, for the 23 cases, \$308,395. The causes of a few of the accidents are set forth in some detail. A table is given in this bulletin showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a list of the 34 most serious accidents in the quarter, with notes on the cause of each. One of these was a rear collision, killing 27 passengers. There is also a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling, as compared with previous quarters; this is accompanied by a reprint of the amendment to the safety-appliance law which was passed in March, 1903.

Bulletin No. 7 (January, February, and March, 1903) contains the usual list of the most serious accidents (*Class A*). In collisions 46 passengers were killed, and the bulletin gives in detail the causes of a rear collision in which 23 persons were killed, and of a butting collision in which 8 persons were killed. In the butting collision the damage to cars and engines was \$79,450. A note is also given on the cause of a rear collision due to the inadequacy of the time-interval rule.

ACCIDENT BULLETIN,

No. 9,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

:


CASUALTIES TO PERSONS

DURING

JULY, AUGUST, AND SEPTEMBER, 1903.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1904.



THE INTERSTATE COMMERCE COMMISSION.

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Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 9.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING SEPTEMBER 30, 1903.

The number of persons killed in train accidents during the months of July, August, and September, 1903, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 280, and of injured 3,582. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 15,187 (1,025 killed and 14,162 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE No. 1.—Casualties to persons—July, August, and September, 1903.

	Passen- gers.		Trainmen.		Trainmen in yards.		Yard trainmen (switch- ing crews).		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	50	1,172	61	580	15	164	10	66	22	188	108	998
Deraillments	10	422	76	331	3	46	7	59	6	84	92	520
Miscellaneous train accidents (excluding the above), in- cluding locomotive-boiler ex- plosions.....		74	13	266	2	67	5	30	....	33	20	896
Total train accidents	60	1,668	150	1,177	20	277	22	155	28	305	220	1,914
Coupling or uncoupling cars.....			18	232	24	278	26	382	2	20	70	912
While doing other work about trains or while attending switches			18	1,130	15	570	8	418	19	456	60	2,574
Coming in contact with over- head bridges, structures at side of track, etc.....	2	13	28	178	3	55	1	66	1	16	33	315
Falling from cars or engines, or while getting on or off.....	40	485	92	923	39	638	35	590	48	270	214	2,421
Other causes	7	522	50	188	34	90	17	94	218	2,966	319	3,338
Total (other than train accidents)	49	1,020	206	2,651	115	1,631	87	1,550	288	3,728	696	9,560
Total all classes.....	109	2,688	356	3,828	135	1,908	109	1,705	316	4,033	916	11,474

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident are not reported.

The number of employees killed in train accidents in this quarter, 220, is about the same as in the corresponding quarter of the preceding year; but in the number of passengers thus killed, 60, there is a large increase. Thirty-seven passengers were killed in two collisions (Record numbers 5 and 33 in the table of causes, page 5).

The number of employees killed in coupling and uncoupling cars also continues large. The probable causes of the increase in this class of accidents, as compared with 1901-2, have been mentioned in preceding bulletins. The numbers killed have been—

Quarter ending—

September 30, 1902	52
December 31, 1902	63
March 31, 1903	76
June 30, 1903	62
September 30, 1903	70

The total number of collisions and derailments was 3,063 (1,765 collisions and 1,298 derailments), of which 251 collisions and 140 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,470,375, namely: July, \$858,914; August, \$750,187; September, \$861,274. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Num- ber.	Loss.	Persons killed.	Persons injured.
Collisions:				
Rear	486	\$480,929	53	606
Butting	279	457,549	59	859
Trains separating	287	137,264	5	115
Miscellaneous	713	388,577	41	590
Total	1,765	1,464,319	158	2,170
Derailments:				
Due to defects of roadway, etc	211	151,868	7	168
Due to defects of equipment	612	529,026	25	219
Due to negligence of trainmen, signalmen, etc	103	76,007	14	110
Due to unforeseen obstruction, etc	106	118,662	23	121
Due to malicious obstruction of track, etc	13	20,019	1	33
Due to miscellaneous causes	253	224,447	32	291
Total	1,298	1,120,029	102	942
Total collisions and derailments	3,063	2,584,348	260	3,112

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

Following is the usual list of Class A train accidents; all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed; and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

Causes of twenty-nine prominent train accidents (Class A).

[NOTE.—R. stands for rear collision; R., battling collision; M., miscellaneous collisions; D., derailment; P., passenger train; F., freight and miscellaneous trains.]

Item.	Record No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Cause.
1	22	R.	P. and F.	2	4	\$1,520	Freight detained at station; inexperienced flagman went back with signal; returned to a point near caboose and went to sleep on track. Engineman and fireman of approaching train might have seen tail lights of freight 2 miles away.
2	21	R.	P. and P.	1	20	2,000	Clear block signal given while the preceding train was still in block section. Signalman 20 years old.
3	18	D.	P.	2	2	5,200	Passenger train, running 60 miles an hour, overran home and distant signal at crossing; engineman and fireman killed.
4	8	M.	P. and P.	1	14	5,513	Collision at crossing; unsettled dispute between the roads as to responsibility.
5	6	B.	F. and F.	1	3	5,745	Engineman fell asleep; fireman unfamiliar with road.
6	3	B.	P. and F.	1	4	5,875	Passenger train ran 8 minutes ahead of time. Conductor and engineman said to have good records.
7	43	D.	F.	2	1	6,100	Train became uncontrollable on steep descending grade; brakes inspected at summit and found satisfactory; track was wet. Trainmen reported as not chargeable with misconduct.
8	33	R.	F. and F.	22	15	6,200	3 a. m. Two trains carrying circus; engineman failed to keep air brakes charged with proper pressure. (See further explanation in text below.)
9	41	D.	P.	2	1	6,500	Excessive speed on curve of 7° 24'; outer rail elevated 7½ inches. No passengers on train.
10	66	R.	F. and F.	0	0	6,800	The engineman neglected to observe caution card delivered to him, and disregarded automatic block signal.
11	31	B.	F. and F.	0	2	7,566	Operator failed to deliver telegraphic order; operator in service at this place 7 days; other places 2 years; age 23.
12	59	M.	F. and F.	1	2	8,700	Collision at crossing. 4 a. m.; signal set at "stop," but did not show red; defective counter-weight.
13	68	B.	F. and F.	0	3	10,000	Dispatcher sent telegraphic order reading 5.20 p. m. Operator copied it 5.30; dispatcher claims that when the order was repeated this error was corrected, but this the operator denies.
14	51	D.	F.	0	0	10,226	Brakebeam dropped.
15	2	B.	P. and P.	1	129	10,480	Improper flagging by eastbound train. Conductor, brakeman, engineman, and fireman dismissed for negligence.
16	23	R.	F. and F.	0	0	10,500	Improper flagging; brakeman returned to his caboose and was killed; 22 years old; 8 months' experience.
17	54	D.	P.	4	27	10,500	Front truck wheel of engine broke.
18	73	B.	F. and F.	0	5	10,500	Train while waiting on side track lost right to road by becoming 12 hours late; conductor and engineman started out, forgetting this limitation.
19	52	D.	F.	0	0	12,000	Broken flange.
20	34	D.	P.	0	5	12,313	10 p. m. Bridge washed out by flood caused by "waterspout." Flood five times greater than capacity of waterway beneath track.
21	46	D.	P.	3	2	13,000	Washout.
22	9	M.	P. and F.	1	3	13,700	Work train on 4½ per cent grade became uncontrollable and ran into the side of passenger train.
23	18	D.	F.	0	1	15,000	Train became uncontrollable on steep grade; engineman "lost his air."
24	5	B.	P. and F.	22	25	16,896	Conductor of freight misread telegraphic order; it read 20 minutes; he read it 1 hour and 20 minutes. Engineman took conductor's word and did not read order.
25	46	D.	Mail.	5	0	18,100	Entire crew (all the persons on the train) killed. Too high speed on curve. Train fell 75 feet. Engineman not long in the service of this road but knew the line and had had experience elsewhere.
26	29	B.	F. and F.	4	4	18,109	Operator made mistake in copying telegraphic order. Dispatcher failed to discover error on repetition; two enginemen disregarded automatic block signal.
27	64	R.	F. and F.	1	2	20,000	Careless running.
28	1	B.	P. and P.	0	1	30,600	Conductor and engineman west bound misread telegraphic order.
29	4	B.	P. and F.	4	60	33,770	Conductor and engineman of one train misread orders. They had a "19" order against "Second No. 1;" but read it "No. 1;" engineman was killed. Being on Form 19 the order was not read by the operator to the conductor and engineman.
Total ..				80	335	333,423	

One accident in the foregoing list (the second) was a collision due to failure in block working, and one other (the tenth) was a collision which occurred on a line equipped with automatic block signals, but while a train was running "permissively." All the other collisions occurred where the block system was not in use. Two of them, the eighth and the twenty-fourth items in the list resulted, between them, in the death of 44 persons and the injury of 40. Item 24 is a pronounced illustration of how concurrent errors of a conductor and an engineman may quickly produce disastrous results. Seventeen passengers and 5 employees and other persons were killed, in this case, in consequence of a lack of care in reading a telegraphic order on the part of the conductor, combined with the neglect on the part of the engineman of his plain duty to read the order himself and not trust to any other person's reading. On many railroads there is a rule requiring the conductor and the engineman, each, after reading a telegraphic order, to read it to an assistant (brakeman or fireman). This rule appears not to have been adopted on the road where this collision occurred.

Item 8, a collision killing 22 persons, appears to have been due to gross negligence of an engineman. The specific charge, in the report made by the railroad company, is that he failed to have his train charged with air; but it is further stated that on approaching the station where the preceding train was standing, and while still a mile off, he failed to see a fusee signal which had been displayed on the track to stop him, and did not shut off steam until warned by his fireman, who had seen the fusee. As the hour was about 3 o'clock in the morning, and as the engineman had not been sleeping during the time allowed him for rest in the preceding day, there is strong ground for the inference that he was asleep at his post. On being aroused by his fireman, this engineman sounded the whistle as a signal for the application of hand brakes; but it appears that the cars of the train, most of them platform cars fitted for carrying large wagons, had no brake wheels in position by which the brakes could be put on by hand. The safety of the train, therefore, so far as the means of stopping it was concerned, depended wholly on the power brake; and this failed by reason of the negligence of the engineman. The air-brake apparatus was found to be in perfect order after the collision, and it was in good working order when the train began its trip before the collision.

The engineman who was at fault in this case had been running this engine only about ten days. He had been in the service of the company about eighteen months. The officers of the road believe that after the last stop was made before the collision (about one hour before) the engineman put his air-brake valve in such a position as to shut off the flow of air from the main reservoir to the pipe leading through the train; and with the supply thus cut off, the air would slowly leak from the train pipe, making the brakes inoperative.

Item 25 (Record No. 48, a derailment) is the fourth disaster to a "fast mail" train which the records have disclosed recently. In one of these cases the superintendent's report specifically states that reckless speed was one of the causes; the circumstances, as given, tend to support the conclusion that in the other three it was the sole cause.

The twenty-ninth accident, a butting collision, disastrous both to persons and to property, affords an illustration of the need of reading all telegraphic orders aloud, in the presence of two or more persons, if the orders are to be depended upon for the safety of life and limb.

This case differs from Item 24 in that there was no requirement that the order should be read aloud in the presence of the telegraph operator, or be signed for. The rule requiring these safeguards was relaxed, as is customary, because the order did not restrict the rights of the train to which it was sent; that is to say, it permitted this train to go farther than it would have gone if the order had not been issued. But it permitted it to go farther only as against a certain opposing train; and the reading into the order of the name or designation of another train, of which the dispatcher issuing the order had no thought, had the effect, of course, of nullifying all the calculations of the dispatcher and of the men in charge of the opposing train or trains.

TABLE NO. 3.—*Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars,*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.), preventing quick work		9		8		8		
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism)		14		11		22		
3	Other causes, apparently due to defective uncoupling mechanism		2		8		6		
4	Defective draft gear, with automatic coupler		1		4				
5	Coupling to an engine or tender		8		6		10		
6	Same (with link-and-pin coupler)		1		4		1		
7	Coupling on inside of sharp curve		5		8		16		
8	Foot caught in or between couplers while adjusting coupler	1	14		14		25		2
9	Slipped, usually on ice or snow	1	3	2	3	2	11	1	
10	Foot caught in frog, guard rail, or switch		2	1	5	5	7		
11	Caught by overhanging load (on platform car)	1	4		3		3		
12	Load shifted		4		3		4		
13	Engaged in operations preliminary to coupling	4	35	1	38	4	43		3
14	While coupling safety chains		4		1	1	5		1
15	Link-and-pin coupler		4		6		9		
16	Link and pin, with automatic coupler		2		2		5		
17	Coupling damaged car (presumably an unavoidable risk)	2	7	2	14	3	17		2
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism)		16	2	30	2	35		
19	Uncoupling, other causes	4	44	4	51	1	80		8
20	Miscellaneous	2	39	6	38	3	62	1	3
21	Not clearly explained	3	14	6	21	5	13		1
	Total	18	232	24	278	26	382	2	20

TABLE NO. 4.—Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car		4		1		3		
	2 Ice or snow		1						
	3 Parting of train	2	11	1	8		7	1	1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	6	79	5	55	5	80	9	27
	5 While setting brakes	9	35	3	36	3	35		5
	Fell from—								
	6 Coal car		1		1		3		3
	7 Freight car other than box or coal car.....		5		1				
	8 Engine or tender.....	10	88	2	62	7	32	1	6
	9 Passenger car.....		4						
C7	10 Engines, tenders, or cars (all kinds) not in motion		64		46		24		24
	11 Miscellaneous causes.....	13	112	4	80	3	64	3	35
	12 Not clearly explained.....	37	33	13	35	6	27	6	17
	13 Slipped getting on moving trains or cars.....	2	113	3	63	1	62	9	44
	14 Jumping off moving trains.....	2	138	3	99	2	106	13	69
	15 Jumping from engines or cars anticipating collision, derailment, or other accident	5	35		12		18		2
	16 Fell from engines or cars by reason of defective hand holds and sill steps.....	1	27		22	1	20		1
	17 Getting on or off moving engine	7	172	5	117	7	106	6	36
	18 Caught in frog, guard rail, or switch		1				1		
	Total	92	923	39	638	35	590	48	270

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the most serious collisions in that quarter, 57 passengers having been killed. There are notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties—4 killed, 126 injured, due to operating trains in which air brakes were used on only a portion of the cars; and the danger of running trains partially air-braked is commented on.

Bulletin No. 2 contains a detailed list showing the cost and causes of the 27 most serious butting collisions in that quarter. In these collisions 70 persons were killed and 234 were injured, and the damage to cars, engines, and roadway amounted to \$306,511. The incompleteness of the statements of causes, as sent in by the railroads, is commented on.

Bulletin No. 3 contains a list similar to that just mentioned, but showing rear instead of butting collisions. As in the first list, only the most serious accidents are considered; and of these there were 41, costing \$160,247. The number of persons killed was 43, and of injured 255.

Bulletin No. 4 contains a third list of collisions, this one including all classes; but it includes only a few in which the damage was less than \$5,000. The totals of this list are: Killed, 30; injured, 187; cost, \$228,597. Collisions occurring where the trainmen had worked very long hours are commented on. In this bulletin a table is given showing the deaths and injuries due to trains parting. The aggregate of damage shown in this table is \$492,781; persons killed, 14; injured, 386. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table of the most serious train accidents in the quarter. Derailments as well as collisions are included, but cases causing damages of less than \$10,000 each are not included, except where the cause of the accident calls for notice. The 23 accidents shown in this table killed 81 persons and injured 356, and the aggregate damage reported was, for the 23 cases, \$308,395. The causes of a few of the accidents are set forth in some detail. A table is given in this bulletin showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a list of the 34 most serious accidents in the quarter, with notes on the cause of each. One of these was a rear collision, killing 27 passengers. There is also a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling, as compared with previous quarters; this is accompanied by a reprint of the amendment to the safety-appliance law which was passed in March, 1903.

Bulletin No. 7 (January, February, and March, 1903) contains the usual list of the most serious accidents (*Class A*). In collisions 46 passengers were killed, and the bulletin gives in detail the causes of a rear collision in which 23 persons were killed, and of a butting collision in which 8 persons were killed. In the butting collision the damage to cars and engines was \$79,450. A note is also given on the cause of a rear collision due to the inadequacy of the time-interval rule.

Bulletin No. 8 contains the usual statistics, including annual statistics to June 30, 1903, and the usual list of particulars of causes of the most serious accidents (*Class A*); and explains in detail the causes of two butting collisions. In one of these collisions a conductor gave a hand-signal to stop, which was taken by the engineman to mean go-ahead. In another case the men in charge of a train read "No. 2" when the order was written "*second* No. 2." This bulletin contains a list of all of the collisions of the quarter, of whatever magnitude, which were caused by mistakes in connection with time-tables or telegraphic orders.

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ACCIDENT BULLETIN,

No. 10.

OCTOBER, NOVEMBER, AND DECEMBER, 1903.

U. S. INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON
GOVERNMENT PRINTING OFFICE
1904

ACCIDENT BULLETIN,

No. 10,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS

DURING

OCTOBER, NOVEMBER, AND DECEMBER, 1903.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON
GOVERNMENT PRINTING OFFICE
1904



THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 10.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE
THREE MONTHS ENDING DECEMBER 31, 1903.

The number of persons killed in train accidents during the months of October, November, and December, 1903, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 446, and of injured 3,178. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 14,485 (1,166 killed and 13,319 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE No. 1.—Summary of casualties to persons—October, November, and December, 1903.

	Passen- gers.		Trainmen.		Train- men in yards.		Yard trainmen (switch- ing crews).		Other employees.		Total employees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	73	789	110	634	14	201	10	91	55	232	189	1,158
Derailments	74	344	66	279	8	54	3	45	6	65	83	443
Miscellaneous train accidents (excluding the above), in- cluding locomotive-boiler ex- plosions.....	....	15	17	232	5	120	4	55	1	22	27	429
Total train accidents	147	1,148	193	1,145	27	375	17	191	62	319	299	2,030
Coupling or uncoupling .....	....	....	19	259	32	238	24	407	3	22	78	926
While doing other work about trains, or while attending switches .....	....	....	10	1,256	13	637	10	474	19	444	52	2,811
Coming in contact with over- head bridges, structures at side of track, etc.....	1	7	18	149	4	67	2	83	6	8	30	307
Falling from cars or engines, or while getting on or off	21	406	79	882	52	640	50	694	29	262	210	2,478
Other causes	6	376	31	136	36	115	25	121	230	2,458	322	2,830
Total (other than train accidents)	28	789	157	2,682	137	1,697	111	1,779	287	3,194	692	9,352
Total all classes.....	175	1,937	350	3,827	164	2,072	128	1,970	349	3,513	991	11,382

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident are not reported.

The derailment which is numbered 4 in the table of causes below was the worst passenger-train accident, measuring by the number of fatalities, that has occurred in this country for fifteen years; and the present record contains six other accidents which caused 106 deaths and 196 injuries, so that this quarter's totals are larger than any

before reported. The casualties to passengers in train accidents during the time since the accident law went into effect have been as follows:

Passengers killed and injured in train accidents.

Quarter ending with—	Bulletin number.	Killed.	Injured.
Sept., 1901.....	1	57	1,237
Dec., 1901.....	2	51	762
Mar., 1902.....	3	41	826
June, 1902.....	4	18	761
Sept., 1902.....	5	41	1,229
Dec., 1902.....	6	40	1,097
Mar., 1903.....	7	52	1,091
June, 1903.....	8	31	1,007
Sept., 1903.....	9	60	1,668
Dec., 1903.....	10	147	1,148

The number killed in the quarter now under review, the last in this list (147), is more than three times the average number killed during the nine preceding quarters, which average is 43 $\frac{1}{3}$. It appears that only four other train accidents have occurred in this country which have caused as many as 65 deaths each. These four are recorded as follows:

Year.	Locality.	Killed.
1888.....	Mud Run, Pa	66
1887.....	Chatsworth, Ill	85
1876.....	Ashtabula, Ohio	80
1856.....	Camp Hill, Pa	66

Some notes on the causes of the notable collisions and derailments recorded in this bulletin will be found following the table of Class A accidents (below).

The total number of collisions and derailments was 3,011 (1,832 collisions and 1,179 derailments), of which 287 collisions and 119 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,527,000. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Num-ber.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	489	\$469,713	88	522
Collisions, butting	296	527,075	126	771
Collisions, trains separating	287	154,549	10	99
Collisions, miscellaneous	760	340,012	38	555
Total.....	1,832	1,491,349	262	1,947
Derailments due to defects of roadway, etc.....	199	126,656	10	123
Derailments due to defects of equipment.....	570	461,520	14	141
Derailments due to negligence of trainmen, signalmen, etc..	98	98,913	11	137
Derailments due to unforeseen obstruction, etc.....	66	89,641	79	91
Derailments due to malicious obstruction of track, etc.....	26	57,121	6	73
Derailments due to miscellaneous causes.....	220	201,800	37	227
Total.....	1,179	1,035,651	157	787
Total collisions and derailments.....	3,011	2,527,000	419	2,734

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

Following is the usual list of Class A train accidents; all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed; and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

Causes of thirty-two prominent train accidents (Class A).

[Note.—R. stands for rear collision; B., butting collision; M., miscellaneous collisions; D., derailment; P., passenger train, F., freight and miscellaneous trains.]

COLLISIONS.

No.	Cl						
1	R	F. and F.	17	35	\$975	2	Collision of work trains; laborers in caboose killed; failure of brakeman to stop train by flag; this brakeman (38 years old) was a yardman, but had passed examination for appointment as road flagman.
2	B	F. and F.	0	2	2,100	11	Engineman disregarded meeting order; operator at meeting point had copy of order, but failed to stop train; engineman's experience as such, 9 months; operator's experience, 12 days.
3	M	P.	0	4	5,100	17	Passenger train ran over misplaced switch and collided with cars on side track; switch left wrong by fireman, to whom brakeman had wrongfully delegated the duty; fireman's experience, 9 months; had been on duty 20 hours.
4	B	P. and F.	1	16	5,335	58	Misplaced switch and false signal at interlocking; interlocking had been disconnected for repairs; repairman and 3 signalmen disregarded rule to use hand signals under such circumstances.
5	B	F. and F.	2	1	7,000	10	Engineman slept and ran past train-order signal; on duty 9 hours 45 minutes, after 3 hours' rest, conductor in caboose, engaged in making report, did not observe signal.
6	R	P. and P.	32	33	7,100	27	Two coaches crushed and destroyed by fire, started presumably by oil lamp; flagman of train standing at station failed to signal approaching train; engineman of latter failed to keep good lookout.
7	B	F. and F.	2	2	7,700	12	Conductor misread name of station in telegraphic order; engineman (who was killed) is claimed by conductor to have read it in the same way; operator to whom order was read by conductor claims that it was read correctly; order was legibly written; conductor's experience as such, 2 months; engineman's experience on this line, 1 month, flagman's, 8 months; fireman's, 1 month.
8	B	P. and P.	16	25	8,200	5	Collision of extra passenger train with switching train in yard, conductor and engineman of passenger train disregarded rule to run through yard with speed under control.
9	B	F. and F.	16	20	8,464	37	Work train continued to occupy main track after expiration of time specified in dispatcher's order.
10	B	F. and F.	0	3	9,200	65	Train became uncontrollable on descending grade; after leaving a car the men in charge had neglected to connect air hose, and power brake was therefore ineffective.
11	B	P. and P.	2	31	10,230	54	Engineman (who was killed) forgot meeting order and ran 3,000 feet beyond meeting station; engineman had neglected to sound the required whistle signal on approaching meeting point, and conductor neglected to apply air brake, as he should have done when such signal was omitted.
12	B	P. and F.	1	7	10,427	61	Freight train waited on side track for train No. 14, and men in charge slept; another train passed and they assumed that it was No. 14.
13	M	F.	0	2	10,770	18	On descending grade, train broke in two, doing slight damage; both parts of train were stopped by automatic application of brakes, but not enough hand brakes were set to hold the train, the air leaked off, and the cars ran away. (See text below.)
14	B	F. and F.	1	2	12,000	16	Engineman, who was to meet two trains, met one and forgot about the other, all members of crew blamed for not remonstrating when engineman started from station on the time of the other train.

Causes of thirty-two prominent train accidents (Class A)—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
15	M	F and F	3	4	\$12,080	39	Collision at crossing; rule required both trains to stop before crossing; both disobeyed.
16	B	P and P	18	57	15,720	56	Engineman ran past station at which he should have stopped for a dispatcher's order; station agent says train-order signal was set to indicate stop; engineman says it indicated all clear; immediately after passage of train (5.30 p. m.) light in signal was found to have been extinguished by wind.
17	R	P. and F....	1	11	17,000	48	Fifteen cars of freight train, left standing on steep grade, ran back into head of following passenger train; cars when left were held by air brakes on 4 and hand brake on 1 (caboose); conductor's experience, 2 years; damage largely caused by fire started from ruptured gas pipe or tank.
18	B	P. and F....	4	5	18,000	8	Conductor and engineman of freight misread timetable.
19	B	P. and P....	3	6	20,800	3	Conductor and engineman, running 4 hours late, overlooked opposing train.
20	B	P. and F....	1	12	21,400	59	Engineman of freight misread telegraphic order.
21	B	F. and F....	6	5	26,900	34	Mistake of operator in writing order and recklessness of conductor and two enginemen; damage largely due to fire and explosion. (See explanation in text below.)
Total collisions...			126	288	236,501	.....

DERAILMENTS.

1	D	P	7	21	\$21,134	74	Passenger train obliged to take sidetrack, because of delay to freight, entered too fast, flagman of freight having neglected to signal the passenger to reduce speed.
2	D	F	1	2	4,000	40	Broken wheel; wheel overheated by hand brake being left on too long by brakeman of one year's experience. Of 33 cars in train only 6 had power brakes working.
3	D	F	1	2	7,000	43	Train became uncontrollable on descending grade (1½ per cent). Of 40 cars in train 30 had power brakes in operation. Rule requires speed to be regulated by hand brakes, but engineman had used air brakes for this purpose and lacked power to apply brakes to make stop.
4	D	P	65	4	9,800	73	Track obstructed by timbers which had fallen from an open car, because load was not securely fastened; car inspectors failed to detect defective stakes. See details in text below.
5	D	P	1	33	10,000	20	Broken journal.
6	D	F	0	0	13,000	22	Broke through burning trestle bridge; dense fog obstructed view of bridge.
7	D	P	0	27	15,000	23	Rails maliciously loosened. Criminal was caught, tried, and sentenced to life imprisonment.
8	D	P	1	4	17,500	44	Broke through burning trestle bridge; bridge had been ignited by camp fire made by tramps.
9	D	P	3	34	18,700	72	Misplaced switch; engineman, running at high speed, disregarded distant and home signals warning him to stop before reaching switch.
10	D	P	1	7	21,818	26	Failure of Howe truss bridge. Cause of failure reported unknown. Timbers in bridge mostly six years old.
11	D	P	3	12	43,300	76	Cause unknown; supposed to be defective track. Of the damage \$37,300 was due to fire which started from coal heater in wrecked passenger car.
Total derailments.			83	146	181,252		
Total collisions and derailments			209	434	417,753		

The accidents referred to on page 3, in connection with derailment No. 4, are (in the order of the magnitude of their death lists) collisions 6, 16, 1, 8, and 9, and derailment No. 1. These seven accidents constitute the most noticeable factor in making this quarter's lists more disastrous than any thus far recorded. Derailment No. 4 happened to an eastbound passenger train, running at about 40 or 45 miles an hour. It struck an obstruction, consisting of heavy timbers 21 feet long, derailing the entire train except the two rear cars. The timbers had fallen from a car in a westbound train on the adjacent track by reason of stake ties parting and stakes breaking. The timbers (a full car-load) were loaded at a lumber yard, and the cause of the accident is reported as "carelessness on the part of employees of the lumber yard in not selecting stakes of good quality and size to make the load secure, and failure of car inspectors to detect this defect." The timbers were loaded by the shipper, and the load was inspected by the agent of the railroad company at the shipping station. It was also inspected by two successive conductors, who were in charge of the train which hauled the car to the first division point, and by the car inspector at this division point. This inspector has been in the employ of the company, in the capacity of car inspector, for sixteen years. Before the car left this place the load was inspected by the assistant yard master, and by the brakeman, who was charged with the duty of putting the car into the train for its trip over the next division; and, finally, by the conductor of this last train. The car was a platform car and the load was 5 feet 10 inches high. The stakes at the sides, set in pockets of the ordinary pattern, were connected across the top of the load by ties consisting of boards, each board being nailed to the side of a stake on one side of the car, and in the same manner to a stake on the opposite side. The passengers who were killed were nearly all of them scalded by steam which escaped from the dome of the engine, which, as a result of the wreck, was left in such a position as to emit steam into the leading passenger car, which was the smoking car. The passengers in the other cars escaped injury.

In view of the exceptional nature of this accident, it will be of interest to note that in the quarter under review there were five other derailments, which were caused by objects on the track which had fallen from cars, as follows:

		Killed,	Injured.	Loss.
77	Car door	1	4	\$2,770
78	Stone	0	1	150
79	Small stone	0	4	1,000
80	Bale of cotton	0	0	325
81	Bridge iron	0	0	600

Collision No. 6, resulting in the death of 32 passengers, was due to negligence on the part of the men in charge of both of the trains involved, combined with fire; the destruction of the two passenger

cars of the foremost train by fire, which presumably started from their oil lamps, having been, according to the railroad company's report, a principal element contributing to the large loss of life and large property damage. The foremost train, an accommodation, was standing at a station, and had been so standing two or three minutes. It was behind time, and the following train, an express, was already due. Notwithstanding these facts the flagman did not go back to give a warning signal until after he had assisted the passengers to alight, and he was then able to go only about 200 feet before the express was upon him. The engineman of the express could have seen the local train's red lights (on the rear car) at a point 2,800 feet in the rear. Presumably, the flagman's knowledge of this fact affords a partial explanation of his neglect. On the other hand, the omission of the engineman of the express to apply the brakes and reduce the speed of his train appears to be taken by the officers of the road to prove that he was not keeping a good lookout, and therefore did not observe the red light of the standing train as soon as he should have observed it. The flagman of the standing train testifies that the engineman of the express did not give the whistle signal, which should have been sounded as an acknowledgment that he saw the flagman's light. This flagman had been in the service of the company five months. The conductor in charge of this train, who should have seen that the flagman promptly performed his duty, has been in the service fifteen years, and his record is reported as good. The engineman of the express has been in the service twenty-six years, and his record is reported as first class.

Collision No. 16 occurred at a time when a violent storm of wind and snow prevailed. Of the men whose contradictory testimony is noted in the table above, the station agent has been in the service of the company thirty-five years, the engineman twenty-six years, and the fireman three years, and all are reported as having clear records. The statements of these men were given not only to the officers of the road, but also before a coroner. If the signal was in the "stop" position, the fact that the light had been extinguished afforded no excuse to an engineman for disregarding it, as it would be his duty in such a case to reduce his speed, or, if necessary, to come to a full stop, in order to learn the reason why the light was not burning or to be able to see the signal by the light of the locomotive headlight. The agent testified that the same light had been extinguished by the wind before on the same evening, and that the light of another lamp of the same style had also been blown out.

The causes of collisions 1 and 8 are explained in the table as fully as it is possible to explain them from the reports which have been received. The 17 persons killed in the first mentioned were all employees, being laborers on a work train, while the 16 killed in the

other were all passengers. The fact that such terrible results may be produced by such simple lapses must be taken to indicate either a grave defect in the methods of managing trains or serious deficiencies in the qualifications of the man or men at fault.

The men responsible for collision No. 9 were the conductor and engineman in charge of the work train. They had been in the service of the company five years; the conductor was 28 years old and the engineman 36. By way of explanation of his error the engineman said that his engine was not working properly, and that in looking for the trouble more time was consumed than he was aware of. The supply of water in the tender had also run low and he was anxious to reach a water station. In this case, as in No. 1, the victims were all employees on a work train.

Collision No. 21 was the result of an error in a train order. The train dispatcher issued an order that train No. 31 would meet train third, No. 52, engine 745, and train No. 34, engine 755, at G. This order was transmitted simultaneously to operators at L. and H. The operator at L. delivered copies to third No. 52 and No. 34, in proper shape; but the operator at H. delivered to No. 31 an order directing that train to meet No. 34 at G., but omitting any mention of train third No. 52. The dispatcher and the operator at L. state that the operator at H. repeated the order back to the dispatcher correctly. It is supposed that this operator took the order correctly, but that he wrote it down in bad shape, and that in recopying the order (recopying is contrary to the rule) he omitted train third No. 52. He has had three years' experience as operator, and had been on duty about eight hours when he took this order. The collision would have been avoided if the conductor and the two enginemen of train No. 31 had done their duty. At G. they took the siding and were met by train third No. 52, with engine 745. They assumed that this was train No. 34 and that a mistake had been made in the number of the engine shown on their order. Without taking proper steps to ascertain if such was really the case, and in violation of the rule, they started out and met No. 34 at high speed. The two enginemen paid the penalty of their error with their lives. One of them had four years' experience as engineer, the other one and one-half years. The conductor has had thirteen years' experience in that capacity.

Concerning collision No. 13, the superintendent reports that he did not blame the trainmen. The train consisted of 53 cars, and it was going down a steep grade (2 per cent) at midnight. It broke in two behind the eleventh car. The whole train being air-braked, both portions were automatically stopped (how far apart is not stated). The conductor was the only man at the rear of the train, and he went back to flag a following train. The two brakemen were on the front part, and before they could get back to the rear portion and set enough

hand brakes to hold it the air leaked off and the 42 cars of the rear part ran forward into the 11 cars of the front part, making a wreck costing \$10,770.

It is hardly necessary to observe that the events recorded in this distressing record have been topics of much discussion in the daily press during the months covered by the report; nor should it be necessary to call attention to the fact that the casualties and losses here set forth have an important bearing in connection with the proposition to extend the use of the block system, which was embodied in the Seventeenth Annual Report of the Commission. Derailment No. 4 has, indeed, no place in a discussion of the block system; but the other derailment (No. 1) and all of the five prominent collisions occurred under circumstances which have been repeated in hundreds of collisions, and these circumstances are the result of defects for which the block system is universally looked upon as the remedy. That is to say, the block system, while not doing away with every element which contributed to the causes of these collisions, does introduce principles of a different character and does promote habits of obedience and precision which have been found to greatly reduce the death and damage record.

TABLE NO. 3.—*Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train men.		Train men in yards.		Yard train men (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.), preventing quick work .....	.....	10	1	7	1	18	.....	1
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism) .....	.....	16	.....	25	.....	25	.....	.....
3	Other causes, apparently due to defective uncoupling mechanism .....	.....	3	.....	5	1	4	.....	2
4	Defective draft gear, with automatic coupler	1	2	.....	3	.....	7	.....	.....
5	Coupling to an engine or tender	2	12	1	11	.....	15	1	2
6	Same (with link-and-pin coupler) .....	.....	.....	.....	2	.....	3	.....	.....
7	Coupling on inside of sharp curve	1	8	1	5	3	29	.....	1
8	Foot caught in or between couplers while adjusting coupler .....	.....	13	.....	13	.....	16	.....	1
9	Slipped, usually on ice or snow	1	14	2	7	2	15	.....	1
10	Foot caught in frog, guard rail, or switch	2	1	1	2	5	5	.....	.....
11	Caught by overhanging load (on platform car) .....	.....	4	.....	2	.....	3	.....	2
12	Load shifted .....	.....	2	.....	1	.....	1	.....	.....
13	Engaged in operations preliminary to coupling	5	28	3	29	3	45	1	3
14	While coupling safety chains	1	.....	.....	.....	.....	1	.....	4
15	Link-and-pin coupler .....	.....	4	.....	1	.....	9	.....	.....
16	Link and pin, with automatic .....	.....	4	.....	2	.....	2	.....	.....
17	Coupling damaged cars (presumably an unavoidable risk)	1	8	1	17	5	23	.....	.....
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism)	1	8	1	5	1	19	.....	.....
19	Uncoupling, other causes	2	48	1	39	1	73	.....	1
20	Miscellaneous	1	49	5	46	.....	68	.....	2
21	Not clearly explained	1	25	15	16	2	26	1	1
	Total	19	259	32	288	24	407	8	22

TABLE NO. 4.—*Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Train-men.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car .....	.....	6	.....	4	.....	3	.....	1
	2 Ice or snow .....	.....	11	.....	7	1	10	.....	.....
	3 Parting of train	2	9	1	8	1	13	.....	3
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3	1	55	5	50	5	83	2	10
	5 While setting brakes	1	27	4	27	5	52	.....	1
	Fell from—								
	6 Coal car .....	.....	6	.....	2	.....	5	.....	10
	7 Freight car other than box or coal car .....	.....	.....	.....	2	.....	1	.....	2
	8 Engine or tender	12	56	4	51	6	32	6	14
	9 Passenger car .....	.....	31	.....	1	.....	1	.....	1
	10 Engines, tenders, or cars (all kinds) not in motion .....	.....	66	.....	50	1	16	.....	27
	11 Miscellaneous causes	10	89	3	67	5	62	5	43
	12 Not clearly explained	31	40	17	24	10	25	6	12
	13 Slipped getting on moving trains or cars	7	80	4	51	5	61	6	33
C7	14 Jumping off moving trains	4	157	7	104	1	139	1	54
	15 Jumping from engines or cars anticipating collision, derailment, or other accident	2	31	.....	15	2	9	.....	2
	16 Fell from engines or cars by reason of defective handholds and sill steps .....	.....	18	7	26	.....	25	.....	.....
	17 Getting on or off moving engine	8	200	.....	151	8	154	3	49
	18 Caught in frog, guard rail, or switch	1	.....	.....	.....	.....	3	.....	.....
	Total	79	882	52	640	50	694	29	262

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty; which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the most serious collisions in that quarter, 57 passengers having been killed. There are notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties (4 killed, 126 injured) due to operating trains in which air brakes were used on only a portion of the cars; and the danger of running trains partially air-braked is commented on.

Bulletin No. 2 contains a detailed list showing the cost and causes of the 27 most serious butting collisions in that quarter. In these collisions 70 persons were killed and 234 were injured, and the damage to cars, engines, and roadway amounted to \$306,511. The incompleteness of the statements of causes, as sent in by the railroads, is commented on.

Bulletin No. 3 contains a list similar to that just mentioned, but showing rear instead of butting collisions. As in the first list, only the most serious accidents are considered; and of these there were 41, costing \$160,247. The number of persons killed was 43, and of injured 255.

Bulletin No. 4 contains a third list of collisions, this one including all classes; but it includes only a few in which the damage was less than \$5,000. The totals of this list are: Killed. 30; injured, 187; cost, \$228,597. Collisions occurring where the trainmen had worked very long hours are commented on. In this bulletin a table is given showing the deaths and injuries due to trains parting. The aggregate of damage shown in this table is \$492,781; persons killed, 14; injured, 386. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table of the most serious train accidents in the quarter. Derailments as well as collisions are included. The causes of a few of the accidents are set forth in some detail. A table is given in this bulletin showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a list of the 34 most serious accidents in the quarter. One of these was a rear collision, killing 27 passengers. There is also a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling, as compared with previous quarters.

Bulletin No. 7 contains the usual list of the most serious accidents (*Class A*). In collisions 46 passengers were killed, and the bulletin gives in detail the causes of a rear collision in which 23 persons were killed. A note is also given on the cause of a rear collision due to the inadequacy of the time-interval rule.

Bulletin No. 8 contains the usual statistics, including annual statistics to June 30, 1903, and explains in detail the causes of two butting collisions. In one of these collisions a conductor gave a hand-signal to stop, which was taken by the engineman to mean go-ahead. In another case the men in charge of a train read "No. 2" when the order was written "*second* No. 2." This bulletin contains a list of all the collisions of the quarter, of whatever magnitude, which were caused by mistakes in connection with time-tables or telegraphic orders.

Bulletin No. 9 records two collisions in which 44 persons were killed, one due to careless handling of a telegraphic order and the other to gross negligence of an engineman, who failed to keep the air-brakes in working order. Reference is made to the derailment of four fast mail trains, by reason of reckless speed.

O

ACCIDENT BULLETIN,

No. 11,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS

DURING

JANUARY, FEBRUARY, AND MARCH, 1904.

INTERSTATE COMMERCE COMMISSION,

WASHINGTON, D. C.

WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1904.

THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 11.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING MARCH 31, 1904.

The number of persons killed in train accidents during the months of January, February, and March, 1904, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 221, and of injured 2,797. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 919 killed and 12,444 injured. These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE No. 1.—Summary of casualties to persons—January, February, and March, 1904.

	Passen- gers.		Trainmen.		Trainmen in yards.		Yard trainmen (switch- ing crews).		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	33	661	57	554	15	259	15	89	12	104	89	1,006
Derailements	7	813	43	234	7	49	4	48	1	60	55	391
Miscellaneous train accidents (excluding the above), in- cluding locomotive boiler ex- plosions.....	.....	21	14	268	6	73	4	49	3	15	27	405
Total train accidents	40	995	114	1,056	28	381	23	186	16	179	181	1,802
Coupling or uncoupling .....	.....	.....	15	214	18	210	36	414	1	19	70	857
While doing other work about trains or while attending switches .....	.....	.....	16	1,299	13	623	14	501	22	403	65	2,826
Coming in contact with over- head bridges, structures out- side of track, etc.....	.....	2	22	146	3	83	9	72	3	16	37	317
Falling from cars or engines or while getting on or off.....	25	295	57	908	20	639	47	683	19	223	143	2,453
Other causes	14	298	32	136	37	137	27	118	248	2,208	344	2,599
Total (other than train accidents)	39	595	142	2,703	91	1,692	133	1,788	298	2,869	659	9,052
Total all classes.....	79	1,590	256	3,759	119	2,073	156	1,974	309	3,048	840	10,854

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident are not reported.

The most prominent items in the foregoing table show a gratifying falling off, both from the figures of the preceding quarter (Bulletin No. 10) and from those of this quarter a year ago (Bulletin No. 7), though, of course, it is only in making such a comparison that any gratification can be found in a record of deaths averaging 10 persons a day. The number of employees killed by falling off cars, etc. (143), is 32 per cent less than the record in Bulletin No. 10. This, very likely, may be due to the increased use of air brakes on freight trains, diminishing the necessity for the men in charge of such trains to ride on the tops of box cars. It seems hardly likely that it is due to a difference in weather conditions, for January, February, and March probably were, as a whole, much colder and more icy than the last three months of 1903. This diminution in the figures as a whole is made in spite of a record of passengers killed in one class—collisions—which is large. Of the 33 fatalities in this class, 18 are chargeable to one collision (No. 18 in Class A).

The total number of collisions and derailments was 2,799 (1,659 collisions and 1,140 derailments), of which 294 collisions and 144 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,256,477. Given more in detail, these facts appear as below:

TABLE No. 2.—*Collisions and derailments.*

	Num-ber.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	526	\$536,056	40	527
Collisions, butting.....	217	390,213	56	546
Collisions, trains separating.....	238	102,038	1	96
Collisions, miscellaneous.....	678	334,506	35	494
Total.....	1,659	1,362,813	132	1,667
Derailments due to defects of roadway, etc.....	222	172,900	11	217
Derailments due to defects of equipment.....	530	411,625	10	124
Derailments due to negligence of trainmen, signalmen, etc..	74	80,423	9	66
Derailments due to unforeseen obstruction, etc.....	93	82,148	15	110
Derailments due to malicious obstruction of track, etc.....	9	11,964	.....	23
Derailments due to miscellaneous causes.....	212	134,604	17	164
Total.....	1,140	893,664	62	704
Total collisions and derailments.....	2,799	2,256,477	194	2,371

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

Causes of twenty-six prominent train accidents (Class A).

[NOTE.—R. stands for rear collision; B., butting collision; M., miscellaneous collisions; D., derailment; P., passenger train; F., freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	B	F. and F....	0	3	\$2,300	59	Dispatcher (experienced, and with good record) overlooked orders; his age 32 years.
2	B	F. and F....	1	0	2,400	55	Engineman (who was killed) fell asleep 3 or 4 minutes before reaching meeting point.
3	B	F. and F....	0	16	3,160	15	Sixteen employees, who were injured, were riding in caboose, which was the leading car of a work train moving westward; engineman of eastbound passenger train misread name of station in order.
4	B	P. and F....	0	6	3,600	54	Wrong signal given; back wire of signal had been frozen and was disconnected; front wire probably pinned down by a piece of iron dropped from a train.
5	B	F. and F....	0	4	3,900	40	Butting collision of extra freight trains; dispatcher failed to make meeting point; his experience 13 months as dispatcher, 12 years as operator.
6	B	P. and P....	0	14	4,941	52	Conductor neglected to deliver meeting order to engineman.
7	B	F. and F....	0	3	5,000	14	Operator, 8 months' experience, failed to deliver order.
8	B	F. and F....	1	0	5,900	41	Flagman, who had been ordered to hold one of the trains, went into caboose to get red light; sat down to warm himself and dry his clothes; fell asleep; had been on duty 16½ hours.
9	B	P. and F....	1	2	7,298	11	Engineman and fireman of empty engine misread telegraphic order; engineman in handing order to fireman told him what it read, but did not tell him correctly; order read "2d No. 1;" these men read it No. 1.
10	B	F. and F....	1	8	7,400	57	Operator failed to notify southbound train that a northbound train, first section, had brought to that point signals for a second section.
11	B	F. and F....	2	1	8,730	60	Operator signed conductor's name to order, but then failed to deliver it; expected conductor to come into office for clearance card, but conductor neglected this duty; both experienced men.
12	R	P. and P....	0	11	10,242	2	Collision within yard limits; foggy; failure to flag.
13	R	F. and F....	0	4	10,400	7	Air brakes frozen and would not work; conductor and brakeman in caboose did not hear whistle signal for hand brakes.
14	B	P. and P....	2	8	12,526	33	Misplaced switch (10 p. m.); brakeman, for some unaccountable reason, turned switch in face of train.
15	M	P. and F....	3	3	14,500	30	Passenger train ran past station; in setting back, ran over a switch, which had meantime been turned, and crushed caboose of freight train on side track; 3 passengers in caboose killed; freight brakeman, in charge of switch, 22 years old; on duty 14 hours 58 minutes.
16	B	P. and F....	5	8	17,100	53	Engineman of north-bound train neglected to examine register, and so was ignorant of nonarrival of south-bound train; proceeded and collided with it at 30 miles an hour. Engineman depended on conductor to check south-bound train, but conductor failed to check correctly.
17	B	P. and F....	0	9	19,000	13	North-bound passenger ordered to wait for 4 south-bound freights; waited only for 3; operator also at fault for clearing signal.
18	B	P. and F....	18	37	26,500	8	Occurred 1 a. m.; passenger train passed a meeting station without stopping; conductor and engineman did not correctly identify freight met at station.
19	M	P.....	0	11	27,180	61	Passenger train entered siding at night at high speed; misplaced switch; some evidence that it had been maliciously misplaced.
20	R	P. and P....	4	9	29,400	1	Foremost train standing at water tank; second train following too closely; furious snowstorm and wind, and very low temperature.
Total			38	157	211,477	.....

Causes of twenty-six prominent train accidents (Class A)—Continued.

DERAILMENTS.

No.	Class.	Kind of train.	Killed.	Injured.	Damages to engines, cars, and roadway.	Reference to record.	Cause.
1	D	P	0	7	\$10,300	29	Unknown.
2	D	F	0	0	10,400	65	Broken wheel.
3	D	F	0	0	11,500	24	On 1½ per cent grade; air brakes failed; extremely cold weather; packing leather in air-brake cylinders frozen, allowing air to leak out; engineer, 3½ years' experience, failed to call for hand brakes in season.
4	D	F	0	0	11,901	48	Broken flange; wheel cast-iron, 33 inches, 600 pounds, made in 1893; chill was too deep and wheel was not bored true.
5	D	P	0	0	14,121	44	Track distorted by solar heat.
6	D	P	0	0	23,260	49	Misplaced switch; wreck burned by fire starting in oil which ran out of the tender.
Total			0	7	81,482	.....
Total collisions and derailments.			38	164	292,959	.....

Only one accident in this list rises to the magnitude of the seven cases which made such an appalling exhibit in Bulletin No. 10; that one is collision No. 18, a butting collision, in which 18 passengers were killed. The circumstances of this case are typical of those features of train management which give rise to the charge, often repeated in various public prints, that American railroad management is reckless. The men in charge of the passenger train in this case had positive written orders to look out for (and meet) a freight train, with an engine of a certain number, at a certain place. This order was delivered to and read by both the conductor and the engineer. The freight train had not reached the appointed meeting place, and the only thing to be done by the men in charge of the passenger train—the regular and usual thing—was to stop their train and wait until the freight train should arrive. But another freight train was there on the side track, and it was *assumed* that that was the one specified in the meeting order. The conductor, apparently, made no effort to identify the freight engine, trusting that his engineer would do so; and the engineer, evidently, was willing to take the risk of passing on (at full speed, no stop being required at that station for leaving or taking passengers), knowing that if his assumption proved wrong he would in all probability cause much damage to property, if not great loss of life. In point of fact, he caused both.

The other cases in the list which are most prominent, on account of being fatal to passengers, are collisions 15 and 20. The last named appears to have been occasioned by the very severe weather which prevailed in January. Two other accidents, both costly, were due, in part, to the unusually low temperature which was so widespread in that month—collision No. 13 and derailment No. 3. A brake failure

due to freezing of packing leather has never before appeared in these records.

Misconduct or negligence of telegraph operators is given as the chief or principal cause of 4 collisions costing \$40,130 in damage to cars and engines and the loss of 3 lives. These are Nos. 7, 10, 11, and 17. One operator failed to deliver an order; one failed to give an oral notice, or notice by flag or signal, and one signed a conductor's name to an order without having been authorized to do so; and in the fourth case, although the conductor and engineman were primarily to blame, the wrongful clearing of a train-order signal by the operator was the final act which made the collision possible. Two collisions, Nos. 1 and 5, were due to mistakes of dispatchers—and dispatchers are presumed to be men who have made good records as operators.

Collision No. 9 is notable as being the fourth case recorded recently as due to precisely the same error in reading a written order—the overlooking of “2d,” or “Second.” Two such cases appeared in Bulletin No. 8, and a third in Bulletin No. 9. This would seem to point, obviously, to the need of a change in the scheme of numbering or naming trains, or in writing the numbers or names in dispatcher's orders. Collision No. 3 was also due to misreading, no explanation being given except that the name which was written and the name which the reader assumed both begin with “St”.

TABLE NO. 3.—*Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.) preventing quick work .....	.....	7	.....	10	.....	15	.....	1
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism) .....	.....	20	1	14	2	39	.....	.....
3	Other causes, apparently due to defective uncoupling mechanism .....	.....	2	.....	1	.....	1	.....	.....
4	Defective draft gear, with automatic coupler .....	.....	1	1	.....	.....	3	.....	.....
5	Coupling to an engine or tender	3	13	1	11	.....	14	.....	4
6	Same (with link-and-pin coupler) .....	.....	1	.....	2	.....	1	.....	.....
7	Coupling on inside of sharp curve .....	.....	7	.....	6	1	29	.....	1
8	Foot caught in or between couplers while adjusting coupler .....	.....	7	.....	8	.....	20	.....	.....
9	Slipped, usually on ice or snow	1	14	1	16	7	25	.....	1
10	Foot caught in frog, guard rail, or switch	1	3	.....	2	4	3	.....	.....
11	Caught by overhanging load (on platform car) .....	.....	4	.....	1	1	2	.....	1
12	Load shifted .....	.....	2	.....	1	.....	3	.....	.....
13	Engaged in operations preliminary to coupling	2	13	4	24	5	48	.....	3
14	While coupling safety chains .....	.....	.....	.....	2	1	4	.....	.....
15	Link-and-pin coupler .....	.....	3	.....	2	.....	6	.....	.....
16	Link and pin, with automatic .....	.....	2	.....	.....	.....	5	.....	.....
17	Coupling damaged cars (presumably an unavoidable risk) .....	.....	14	1	11	2	14	.....	.....
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism) .....	.....	9	2	10	.....	19	.....	1
19	Uncoupling, other causes	1	34	.....	36	.....	58	1	2
20	Miscellaneous	3	45	1	37	2	78	.....	4
21	Not clearly explained	4	13	6	16	11	32	.....	1
Total		15	214	18	210	36	414	1	19

TABLE No. 4.—*Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Trainmen.		Trainmen		Yard trainmen		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car		6		2		4		1
	2 Ice or snow	2	17	1	18	1	25		
	3 Parting of train	1	4		4		5		1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 8								
	5 While setting brakes	3	38	1	62	5	86	4	5
	Fell from—								
	6 Coal car	3	36		32	5	36		2
	7 Freight car other than box or coal car	1	6		2		3		9
	8 Engine or tender	1	1		1				4
C7	9 Passenger car	1	90	4	69	3	32		2
	10 Engines, tenders, or cars (all kinds) not in motion								
	11 Miscellaneous causes	1	80		76		20	1	37
	12 Not clearly explained	7	87	1	72	7	82	1	32
	13 Slipped getting on moving trains or cars	26	70	5	17	14	33	1	14
	14 Jumping off moving trains	1	83	1	43	2	73	3	22
	15 Jumping from engines or cars anticipating collision, derailment, or other accident	2	157	2	97	2	120	5	56
	16 Fell from engines or cars by reason of defective handholds and sill steps	2	80		19		14		1
	17 Getting on or off moving engine		28		18		27		
	18 Caught in frog, guard rail, or switch	7	185	5	126	8	142	1	35
	Total	67	908	20	689	47	683	19	223

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1911. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the most serious collisions in that quarter, 57 passengers having been killed. There are notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties—4 killed, 126 injured—due to operating trains in which air brakes were used on only a portion of the cars; and the danger of running trains partially air-braked is commented on.

Bulletin No. 2 contains a detailed list showing the cost and causes of the 27 most serious butting collisions in that quarter. In these collisions 70 persons were killed and 234 were injured, and the damage to cars, engines, and roadway amounted to \$306,511. The incompleteness of the statements of causes, as sent in by the railroads, is commented on.

Bulletin No. 3 contains a list similar to that just mentioned, but showing rear instead of butting collisions. As in the first list, only the most serious accidents are considered; and of these there were 41, costing \$160,247. The number of persons killed was 43, and of injured 255.

Bulletin No. 4 contains a third list of collisions, this one including all classes; but it includes only a few in which the damage was less than \$5,000. The totals of this list are: Killed, 30; injured, 187; cost, \$228,597. Collisions occurring where the trainmen had worked very long hours are commented on. In this bulletin a table is given showing the deaths and injuries due to trains parting. The aggregate of damage shown in this table is \$492,781; persons killed, 14; injured, 386. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table of the most serious train accidents in the quarter. Derailments as well as collisions are included. The causes of a few of the accidents are set forth in some detail. A table is given in this bulletin showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a list of the 34 most serious accidents in the quarter. One of these was a rear collision, killing 27 passengers. There is also a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling, as compared with previous quarters.

Bulletin No. 7 contains the usual list of the most serious accidents (*Class A*). In collisions 46 passengers were killed, and the bulletin gives in detail the causes of a rear collision in which 23 persons were killed. A note is also given on the cause of a rear collision due to the inadequacy of the time-interval rule.

Bulletin No. 8 contains the usual statistics, including annual statistics to June 30, 1903, and explains in detail the causes of two butting collisions. In one of these collisions a conductor gave a hand-signal to stop, which was taken by the engineman to mean go-ahead. In another case the men in charge of a train read "No. 2" when the order was written "*second* No. 2." This bulletin contains a list of all the collisions of the quarter, of whatever magnitude, which were caused by mistakes in connection with time-tables or telegraphic orders.

Bulletin No. 9 records two collisions in which 44 persons were killed, one due to careless handling of a telegraphic order and the other to gross negligence of an engineman, who failed to keep the air-brakes in working order. Reference is made to the derailment of four fast mail trains by reason of reckless speed.

Bulletin No. 10 records the death of 147 passengers in collisions and derailments—more than three times the average number killed during the nine preceding quarters. One derailment, due to an accidental obstruction, killed 65 passengers, and six other accidents caused 106 deaths. The causes of the derailment mentioned and four of the worst collisions are explained at length.

ACCIDENT BULLETIN,
No. 12,
SHOWING COLLISIONS AND DERAILMENTS OF TRAINS
AND
CASUALTIES TO PERSONS
DURING
APRIL, MAY, AND JUNE, 1904,
WITH
TABLES FOR THE YEAR ENDING JUNE 30, 1904.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1904.

THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 12.

RAILROAD ACCIDENTS IN THE UNITED STATES,

DURING THE

THREE MONTHS ENDING JUNE 30, 1904.

The number of persons killed in train accidents during the months of April, May, and June, 1904, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 167 and of injured 2,378. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 12,095 (677 killed and 11,418 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE No. 1.—*Casualties to persons—April, May, and June, 1904.*

	Passen- gers.		Trainmen.		Trainmen in yards.		Yard trainmen (switch- ing crews).		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	10	761	39	309	7	114	6	49	16	66	68	538
Derailments	12	343	44	234	2	47	6	49	3	55	55	386
Miscellaneous train accidents (excluding the above), in- cluding locomotive boiler ex- plosions.....	1	30	18	214	2	65	1	31	....	11	21	321
Total train accidents	23	1,134	101	757	11	226	13	129	19	132	144	1,244
Coupling and uncoupling.....	.....	.....	17	221	15	169	25	335	3	21	60	746
While doing other work about trains or while attending switches .....	.....	.....	7	1,103	7	449	8	422	9	476	81	2,450
Coming in contact with over- head bridges, structures at side of track, etc.....	2	11	11	147	3	55	1	65	1	4	16	271
Falling from cars or engines or while getting on or off	29	331	63	721	20	448	31	574	19	276	133	2,019
Other causes	3	386	20	99	13	70	17	65	186	2,592	236	2,826
Total (other than train accidents)	34	728	118	2,291	58	1,191	82	1,461	218	3,369	476	8,312
Total, all classes	57	1,862	219	3,048	69	1,417	95	1,590	237	3,501	620	9,556

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident are not reported.

In train accidents, the total number of killed, both of passengers and of employees, is less than in the corresponding quarter of the preceding year; and the same is true of employees both in train accidents and in other classes. The reduction in the passenger death list is gratifying, but the yearly tables, given on a subsequent page, show, unfortunately, a large increase which completely neutralizes the decrease for the quarter.

The total number of collisions and derailments was 2,418 (1,180 collisions and 1,238 derailments), of which 176 collisions and 144 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,015,252. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Num- ber.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	235	\$196,322	14	276
Collisions, butting.....	136	321,588	39	552
Collisions, trains separating.....	212	97,815	9	102
Collisions, miscellaneous.....	597	256,712	16	369
Total.....	1,180	872,437	78	1,299
Derailments due to defects of roadway, etc.....	234	161,114	5	208
Derailments due to defects of equipment.....	585	551,221	11	146
Derailments due to negligence of trainmen, signalmen, etc..	58	47,249	7	42
Derailments due to unforeseen obstruction, etc.....	71	111,966	15	94
Derailments due to malicious obstruction of track, etc.....	62	13,613	12	67
Derailments due to miscellaneous causes.....	228	257,652	17	171
Total.....	1,238	1,142,815	67	728
Total, collisions and derailments.....	2,418	2,015,252	145	2,027

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest.

Causes of twenty-seven prominent train accidents (Class A).

[NOTE.—R. stands for rear collision; B., butting collision; M., miscellaneous collisions; D., derailment; P., passenger train; F., freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to en- gines, cars, and roadway.	Reference to record.	Causes.
1	B.	F. and F....	1	2	\$1,150	32	Collision between freight and work trains: work train pushing car ahead of engine; dispatcher, twenty-seven years' experience, overlooked east-bound extra when giving orders to west-bound.
2	B.	P. and P....	0	51	1,750	25	South-bound train waiting on sidetrack as north-bound train approached; a train porter, of three months' experience, became unaccountably confused and threw switch for sidetrack. Injuries slight.

Causes of twenty-seven prominent train accidents (Class A)—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Causes.
3	B.	F. and F....	0	0	\$2,175	58	Conductor and engineman of extra train overlooked the fact that the time of regular train had been changed by new time-table issued that day.
4	R.	F. and F....	0	1	2,200	23	Block-signal operator (experienced) gave clear signal when block section was not clear.
5	R.	P. and P....	3	21	2,700	1	Engineman (experienced) ran past three automatic stop block signals; signals were 6,410 feet, 3,530 feet, and 1,330 feet back from point of collision; flagman also back 1,000 feet.
6	B.	P. and P....	0	10	2,754	48	Conductor of train No. 1 examined register and failed to note that train No. 2 had not arrived.
7	B.	F. and F....	3	3	3,025	57	Operator failed to deliver meeting order.
8	B.	P. and F....	2	24	4,100	4	Conductor and engineman, who had been on their trip only 15 minutes, overlooked meeting order.
9	B.	P. and F....	0	17	6,430	52	Engineman and fireman of empty engine overlooked meeting order.
10	B.	P. and P....	0	27	8,691	53	Conductor and engineman (experienced) forgot meeting order. Injuries of passengers slight.
11	M.	P. and F....	0	3	9,500	11	Cars of freight train left standing on main track while switching was being done on side tracks; engineman of freight in service only 2 weeks.
12	B.	F. and F....	0	3	13,000	29	Mistake of dispatcher; sent conflicting orders when he could and should have used the "duplicate form," sending the orders to the two trains in the same words.
13	B.	F. and F....	1	3	13,400	9	East-bound train had order to run 6 hours 20 minutes late; ran 6 hours 5 minutes late.
14	B.	F. and F....	1	5	15,000	8	Operator (experienced) reported that a train had not passed, when in fact it had, thereby leading to the delivery to another train of an order which caused collision.
15	B.	F. and F....	1	1	15,000	59	Engineman (who was killed) started from station, at beginning of trip, without order from conductor and without going to dispatcher's office for orders, as required by rule. Conductor, being in the office at the time, was left behind.
16	B.	F. and F....	0	2	20,000	49	Block signalman admitted west-bound train to block section occupied by an east-bound train.
17	B.	P. and F....	2	25	20,000	6	Freight, waiting on a sidetrack, ordered to meet 3 trains, was started out after 2 trains had passed; conductor, engineman, and flagman, while waiting, had slept, and on waking assumed that 3 trains had passed.
18	B.	P. and F....	1	8	21,575	28	Conductor and engineman of freight overlooked meeting point. (See further note in text below.)
Total			15	206	162,450	.....

DERAILMENTS.

1	D.	F	0	2	\$5,603	19	Brake beam dropped and damaged air pipe; air brakes became inoperative, and train ran away on steep grade. Men in charge had not complied with the rule requiring them to stop and inspect cars before descending grade, and also neglected to use hand brakes, in lieu of retaining valves, to partly control speed.
2	D.	F	0	0	8,500	39	Air brakes on one car, unknown to trainmen, remained applied and heated a wheel, causing it to break.
3	D.	F	0	0	10,000	18	Broken wheel flange.
4	D.	P	0	2	10,165	14	Defective spindle in switch, allowing switch to become unfastened.
5	D.	F	0	0	11,127	15	Broken wheel.
6	D.	F	0	0	15,000	36	Thirty-four cars derailed, of which 23 were wrecked. Believed due to drawbar pulled out; speed of train, 45 miles an hour.

*Causes of twenty-seven prominent train accidents (Class A)—Continued.***DERAILMENTS—Continued.**

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Causes.
7	D.	P	7	23	\$25,797	20	Engineman (who was killed) overlooked order to reduce speed on entering sidetrack at small station where main track was obstructed. Engineman, of 30 years' experience, on duty 4 hours.
8	D.	P	1	6	30,000	67	Occurred 10 p. m.; washout at iron-pipe culvert, caused by unusually severe local storm.
9	D.	F	0	1	39,000	64	Derailment, caused by broken wheel flange; occurred on bridge; derailed cars knocked down 2 spans of bridge.
Total			8	34	155,192	.....
Total collisions and derailments			23	240	317,642	.....

The accident most fatal to passengers in this record was a derailment (No. 7 in the foregoing table). The cause, however, was one which constantly recurs in the collision record—forgetfulness on the part of an engineman. In this case the man at fault was killed. The circumstances show the weakness and insufficiency of the requirement—ostensibly a safeguard—that the conductor of a train, equally with the engineman (so far as possible), shall guard against disaster. This requirement is found in all rule books. Theoretically, the conductor, in this case, having in his possession a copy of the slow-order, could have had his mind on the matter, approaching the sidetrack, and his hand on the emergency brake valve with which every car is equipped, and thus could have stopped the train in spite of the engineman's failure to act. But, practically, this safeguard fails in a large percentage of the emergencies which it is designed to provide for. The inadequacy of the requirement that the fireman shall be an assistant lookout man is also illustrated in this case. To be of sufficient value as a lookout to be relied upon firemen must not only be intelligent and experienced, but must also be trained in lookout duties.

In the collision record, the salient feature is the fact that three cases occurred on block-sigaled lines. Two of these (Nos. 4 and 16) fortunately were unattended by fatalities; but the third, No. 5, killed three passengers. This case is somewhat similar to a notable one recorded in Bulletin No. 7 (January, 1903) where over 100 persons were killed or injured (23 deaths). In both cases the automatic block-signal equipment of the road was complete and in good order.

While, as in these cases, the block system, as used and administered on the best-managed railroads, does not provide against extreme recklessness or all kinds of gross negligence, and to that extent falls short of perfection, the roads not block sigaled continue to fill the records

with costly and fatal collisions, which the block system would undoubtedly have prevented. Nos. 1 and 12 in the present record were due to errors by dispatchers—errors in work, the very essence of which is or should be constant watchfulness against errors. No. 8 records the forgetfulness of a conductor and an engineman whose minds had had only fifteen minutes in which to lapse from their supposedly normal state of vigilance. No. 17 shows concurrent recklessness on the part of three men, or inexplicable dullness.

In No. 18 the engineman of the freight (who was killed) started out from a station on the time of a passenger train then due from the opposite direction. Either he forgot about the passenger train or assumed that a switching engine which had passed was the passenger train. The conductor of the freight, sitting in the caboose, heard the switching engine pass, but took no pains to identify it; the engineman having started the train immediately afterwards, the conductor then assumed that the switching engine was the passenger train.

The rest of the collisions in the table are no less worthy of attention, for they show costly blunders, which would be startling if they had not become so common.

TABLE NO. 3.—*Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.), preventing quick work		15	1	9	....	12	....	1
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism)		10	1	12	....	22	....
3	Other causes, apparently due to defective uncoupling mechanism		3	1	2	....	5	....
4	Defective draft gear, with automatic coupler		4	....	2	....	3	....
5	Coupling to an engine or tender		9	1	10	1	8	....	1
6	Same (with link-and-pin coupler)				1	....	1	....
7	Coupling on inside of sharp curve	1	9	....	2	....	22	....
8	Foot caught in or between couplers while adjusting coupler		15	....	8	....	30	....	1
9	Slipped, usually on ice or snow		5	....	11	1	14	....	2
10	Foot caught in frog, guard rail, or switch		2	2	2	8	7	....
11	Caught by overhanging load (on platform car)	1	5	....	2	....	2	....
12	Load shifted		3	....	1	....	2	....
13	Engaged in operations preliminary to coupling	4	17	3	28	5	46	1	2
14	While coupling safety chains				1	....	6	....	2
15	Link-and-pin coupler		3	....	1	....		....
16	Link and pin, with automatic		2	....		....	1	....
17	Coupling damaged cars (presumably an unavoidable risk)	3	12	1	7	4	13	....	1
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism)	1	7	....	8	1	19	....
19	Uncoupling, other causes		39	2	21	1	53	....	5
20	Miscellaneous	3	43	2	26	2	47	1	4
21	Not clearly explained	4	18	1	15	2	22	1	2
	Total	17	221	15	169	25	335	3	21

TABLE NO 4.—*Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Train-men.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car		4		6		6		1
	2 Ice or snow						1		
	3 Parting of train		3	1	2		8	1	1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3	3	55	2	43	2	73	2	19
	5 While setting brakes	5	28	1	13	4	44	1	3
	Fell from—								
	6 Coal car		3			1	5		3
	7 Freight car other than box or coal car	2	7				1		10
	8 Engine or tender	12	79	4	43	6	32		8
	9 Passenger car		2		3		2		2
	10 Engines, tenders, or cars (all kinds) not in motion		46		49		28	1	34
C7	11 Miscellaneous causes	4	63	3	27	1	40	1	20
	12 Not clearly explained	29	50	6	14	7	23	1	22
	13 Slipped getting on moving trains or cars	4	88		45	5	60	5	56
	14 Jumping off moving trains	1	109	1	75	2	110	3	48
	15 Jumping from engines or cars anticipating collision, derailment, or other accident		28		6		12		3
	16 Fell from engines or cars by reason of defective handholds and sill steps		24		15	1	26		
	17 Getting on or off moving engine	3	131	2	107	2	101	4	46
	18 Caught in frog, guard rail, or switch		1				2		
	Total	63	721	20	448	31	574	19	276

YEARLY TABLES.

This bulletin completes the publication of the accident records under the law of March 3, 1901, for three years, and the following table (A) gives the aggregate, for the year ending June 30, 1904, of the items which are given in Table No. 1 of the quarterly returns. The total number of casualties shown in Table A is 55,130 (3,787 killed and 51,343 injured).

These totals are not comparable with those given in the Commission's Annual Statistical Reports, for the reason that the monthly reports deal only with accidents to passengers and employees while actually on duty. The monthly reports take no account of accidents to "other persons." These appear in the Annual Reports, and include casualties at highway crossings, to trespassers and persons walking along the track, accidents to employees in shops remote from the railroad, and all other accidents not occurring to passengers and employees actually on duty.

TABLE A.—Summary of casualties to persons, year ending June 30, 1904.

	Passen- gers.		Trainmen.		Train- men in yards.		Yard trainmen (switch- ing crews).		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	166	3,883	267	2,077	51	738	41	295	105	590	464	3,700
Derailments	103	1,422	229	1,078	20	196	20	201	16	264	285	1,739
Miscellaneous train accidents (excluding the above), in- cluding locomotive-boiler explosions	1	140	62	980	15	325	14	165	4	81	95	1,551
Total train accidents ...	270	4,945	558	4,135	86	1,259	75	661	125	935	844	6,990
Coupling and uncoupling			69	926	89	895	111	1,538	9	82	278	3,441
While doing other work about trains or while attending switches			51	4,788	48	2,279	40	1,815	69	1,779	208	10,661
Coming in contact with over- head bridges, structures at side of track, etc	5	33	79	620	13	260	13	286	11	44	116	1,210
Falling from cars or engines, or while getting on or off ...	115	1,517	291	3,434	131	2,365	163	2,541	115	1,031	700	9,371
Other causes	30	1,582	133	559	120	412	86	398	882	10,224	1,221	11,593
Total (other than train accidents)	150	3,132	623	10,827	401	6,211	413	6,578	1,086	13,160	2,523	36,276
Total, all classes	420	8,077	1,181	14,462	487	7,470	488	7,239	1,211	14,095	3,367	43,266

In Table B, following, comparisons may be made of the totals of the principal classes of casualties. The large increase of 64½ per cent in the number of fatal accidents to passengers is but the record of a condition which has already been made familiar by the quarterly bulletins and by the daily newspapers month by month. In the first quarter of the year a rear collision of circus trains and a butting collision of a passenger train and a freight killed 22 each. In the second quarter one collision of passenger trains caused 32 deaths, another 18, and a third 16; and a derailment due to an accidental obstruction on the track swelled the death list for the quarter to figures far beyond any ever before recorded. (This quarter also shows two collisions of work trains, killing, together, 33 railroad employees.) In the third quarter 18 persons were killed in one collision. The fourth quarter, now reported, has no collisions so disastrous as those here recounted.

As the Accident Bulletins are issued for the purpose of furnishing the public with facts, this exhibit of the dangers of railroad travel—an exhibit which the most conservative must agree should be termed alarming—will not be made the subject of comment in this place; but it will be proper to observe that each succeeding bulletin adds materially to the mass of evidence going to enforce the observations and recommendations which were made in the last annual report of the Commission.

TABLE B.—*Casualties to passengers and employees, years ending June 30.*

	1904.		1903.		1902.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers:						
In train accidents.....	270	4,945	164	4,424	167	3,586
Other causes.....	150	3,132	157	2,549	136	2,503
Total.....	420	8,077	321	6,973	303	6,089
Employees:						
In train accidents.....	844	6,990	895	6,440	697	5,046
In coupling accidents.....	278	3,441	253	2,788	143	2,113
Overhead obstructions, etc.....	116	1,210	93	992	104	1,070
Falling from cars, etc.....	700	9,371	678	8,025	537	6,867
Other causes.....	1,429	22,254	1,314	20,759	1,085	18,615
Total.....	3,367	48,266	3,233	39,004	2,516	33,711
Total passengers and employees.....	3,787	51,343	3,554	45,977	2,819	39,800

The following tables, C, D, and E, show, respectively, for twelve months, the facts which appear in Tables 2, 3, and 4 of the quarterly returns:

TABLE C.—*Collisions and derailments; damage to cars, engines, and roadway, year ending June 30.*

	1904.				1903.		1902.	
	Num-ber.	Loss.	Persons killed.	Persons injured.	Num-ber.	Loss.	Num-ber.	Loss.
Collisions, rear.....	1,736	\$1,683,020	195	1,931	.....	.....	.....	.....
Collisions, butting.....	928	1,696,425	280	2,728	.....	.....	.....	.....
Collisions, trains separating..	1,024	491,666	25	412	.....	.....	.....	.....
Collisions, miscellaneous.....	2,748	1,319,807	130	2,012	.....	.....	.....	.....
Total.....	6,436	5,190,918	630	7,083	6,167	\$5,615,746	5,042	\$4,285,683
Derailments due to defect of roadway, etc.....	866	612,538	33	716	821	636,718	547	443,706
Derailments due to defect of equipment.....	2,297	1,953,392	60	630	1,841	1,502,325	1,609	1,295,299
Derailments due to negligence of trainmen, signalmen, etc.....	833	302,592	41	355	297	230,907	255	136,241
Derailments due to unforeseen obstruction, etc.....	336	402,417	132	416	277	317,456	239	546,478
Derailments due to malicious obstruction of track, etc....	110	102,717	19	196	71	157,290	57	63,246
Derailments due to miscellaneous causes.....	918	818,508	103	848	1,169	1,136,535	926	874,753
Total.....	4,855	4,192,159	388	3,161	4,476	3,981,231	3,633	3,259,728
Total collisions and derailments.....	11,291	9,383,077	1,018	10,244	10,643	9,596,977	8,675	7,645,406

TABLE D.—Causes of accidents to employees in coupling and uncoupling cars, year ending June 30, 1904.

Sub-class.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.) preventing quick work		41	2	34	1	53		3
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism)		60	2	62	2	108		
3	Other causes, apparently due to defective uncoupling mechanism		10	1	16	1	16		2
4	Defective draft gear, with automatic coupler	1	8	1	9		13		
5	Coupling to an engine or tender	5	42	3	38	1	47	1	7
6	Same (with link-and-pin coupler)		2		9		6		
7	Coupling on inside of sharp curve	2	29	1	21	4	96		2
8	Foot caught in or between couplers while adjusting coupler	1	49		43		91		4
9	Slipped, usually on ice or snow	3	36	5	37	12	65	1	4
10	Foot caught in frog, guard rail, or switch	3	8	4	11	22	22		
11	Caught by overhanging load on platform car	2	17		8	1	10		3
12	Load shifted		11		6		10		
13	Engaged in operations preliminary to coupling	15	93	11	119	17	182	2	11
14	While coupling safety chains	1	4		4	2	16		7
15	Link-and-pin coupler		14		10		24		
16	Link and pin, with automatic		10		4		13		
17	Coupling damaged cars (presumably an unavoidable risk)	6	41	5	49	14	67		4
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism)	2	40	5	53	4	92		1
19	Uncoupling, other causes	7	165	7	147	8	264	1	16
20	Miscellaneous	9	176	14	147	7	250	2	13
21	Not clearly explained	12	70	28	68	20	93	2	5
	Total	69	926	89	895	111	1,538	9	82

TABLE E.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines, year ending June 30, 1904.

Sub-class.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car		19		13		16		3
	2 Ice or snow	2	29	1	25	2	36		
	3 Parting of train	5	27	3	22	1	33	2	6
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3	13	227	13	200	17	302	17	61
	5 While setting brakes	18	126	8	108	17	167	1	11
	Fell from—								
	6 Coal car	1	16		5	1	16		25
	7 Freight car other than box or coal car	2	13		4		2		16
	8 Engine or tender	35	313	14	211	22	128	7	36
C7	9 Passenger car		37		4		3		5
	10 Engines, tenders, or cars (all kinds) not in motion	1	256		221	1	88	2	122
	11 Miscellaneous causes	34	351	11	246	16	248	10	130
	12 Not clearly explained	123	193	41	90	37	108	14	65
	13 Slipped getting on moving trains or cars	14	364	8	202	13	256	23	155
	14 Jumping off moving trains	9	561	13	375	7	477	22	221
	15 Jumping from engines or cars, anticipating collision, derailment, or other accident	7	124		52	2	53		8
	16 Fell from engines or cars by reason of defective handholds and sill steps	1	87	7	81	2	98		1
	17 Getting on or off moving engine	25	688	12	501	25	503	17	166
	18 Caught in frog, guard rail, or switch	1	3		2		7		
	Total	291	3,434	131	2,365	163	2,541	115	1,031

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties due to operating trains in which air brakes were used on only a portion of the cars.

Bulletin No. 4 has comments on collisions occurring where the trainmen had worked very long hours. In this bulletin a table is given showing the deaths and injuries due to trains parting. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling, as compared with previous quarters.

Bulletin No. 7 contains a note on the cause of a rear collision due to the inadequacy of the time-interval rule.

Bulletin No. 8 explains in detail the causes of two butting collisions. In one of these collisions a conductor gave a hand-signal to stop, which was taken by the engineman to mean go-ahead. In another case the men in charge of a train read "No. 2" when the order was written "*second* No. 2." This bulletin contains a special list of all the collisions of the quarter, of whatever magnitude, which were caused by mistakes in connection with time-tables or telegraphic orders.

Bulletin No. 9 records two collisions in which 44 persons were killed, one due to careless handling of a telegraphic order and the other to gross negligence of an engineman, who failed to keep the air-brakes in working order. Reference is made to the derailment of four fast mail trains by reason of reckless speed.

Bulletin No. 10 records the death of 147 passengers in collisions and derailments—more than three times the average number killed during the nine preceding quarters. One derailment, due to an accidental obstruction, killed 65 passengers, and six other accidents caused 106 deaths. The causes of the derailment mentioned and of four of the worst collisions are explained at length.

Bulletin No. 11 contains a note on one butting collision which resulted in the deaths of 18 passengers and injuries to 37, the collision being caused by failure to identify a freight train on a sidetrack at night; but aside from this the quarter's totals are in nearly every case less than in preceding quarters. Two costly accidents were caused by air-brake failures which were due to extreme cold weather. Mention is made of a fourth error like that shown in Bulletin No. 8 (readers overlooked the word "second").

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130
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ACCIDENT BULLETIN,

No. 13.

JULY, AUGUST, AND SEPTEMBER, 1904.

**8. INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.**

**WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1905.**

ACCIDENT BULLETIN,

No. 13.

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS

DURING

JULY, AUGUST, AND SEPTEMBER, 1904.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1905.

THE INTERSTATE COMMERCE COMMISSION.

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Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. JAMES D. YEOMANS, of Iowa.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN NO. 13.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING SEPTEMBER 30, 1904.

The number of persons killed in train accidents during the months of July, August, and September, 1904, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 411, and of injured 3,747. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 14,239 (1,032 killed and 13,207 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE NO. 1.—*Casualties to persons—July, August, and September, 1904.*

	Passen- gers.		Trainmen.		Train- men in yards.		Yard trainmen (switch- ing crews).		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	124	1,201	60	457	12	152	5	76	9	99	86	784
Derailments.....	104	922	66	329	7	34	7	42	6	65	86	470
Miscellaneous train accidents (excluding the above), in- cluding locomotive boiler explosions.....		31	7	227	2	65	1	31	1	16	11	339
Total train accidents....	228	2,154	133	1,013	21	251	13	149	16	180	183	1,593
Coupling or uncoupling.....			17	190	21	169	21	344		18	59	721
While doing other work about trains or while attending switches.....			12	1,106	10	537	6	433	18	477	46	2,613
Coming in contact with over- head bridges, structures at side of track, etc.....	4	23	15	139	4	62	2	75	2	17	23	293
Falling from cars or engines, or while getting on or off....	34	478	60	695	20	486	39	485	23	285	142	1,951
Other causes.....	10	518	39	96	17	76	24	57	223	2,634	803	2,863
Total (other than train accidents).....	48	1,019	143	2,286	72	1,330	92	1,394	266	3,431	573	8,441
Total all classes.....	276	3,173	276	3,299	93	1,581	105	1,543	282	3,611	756	10,034

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident are not reported.

The total number of casualties reported as occurring in this quarter is less than for the corresponding quarter of the preceding year. The number of employees killed in coupling accidents (59) is 11 less; in train accidents (183) it is 37 less, and every item in that column is less, the total (756 employees killed) showing a falling off of 160. This is a gratifying showing, which it is to be hoped is not due alone to a diminution of the number of men at work. But notwithstanding the facts here shown, the quarter under review may, as a whole, be termed the most disastrous on record, for the fatal accidents to passengers make an unprecedented aggregate, practically neutralizing the diminution in the number of employees killed. In Bulletin No. 10 (quarter ending with December, 1903) the number of passengers killed in train accidents (147) was shown to be more than three times the average of nine preceding quarters; and now we must record a total more than 50 per cent greater than that in Bulletin No. 10.

Of the 228 passengers and 183 employees killed in train accidents 217 cases are accounted for by six accidents, and these 217 were nearly all passengers. The causes of these six (two derailments and four collisions) are given below in connection with the table of class A accidents.

These six accidents were the subject of widespread comment in the press, and the feeling of the public concerning the dangers of railroad travel and railroad employment, as illustrated by these cases, was alluded to in the eighteenth annual report of the Commission. The six cases, in the order of their magnitude, measured by the number of persons killed, were as follows (the numbers refer to the class A table):

	Killed.	Injured.
(a) Derailment No. 10	88	0
(b) Collision No. 23	63	162
(c) Collision No. 24	24	45
(d) Collision No. 11	18	183
(e) Collision No. 5	16	52
(f) Derailment No. 2	8	45
Total, in 6 accidents	217	487

The first and fifth of these cases (*a* and *e*) illustrate the need, also spoken of in the eighteenth annual report, of special inquiries into particular accidents if full and impartial statements of the facts are to be secured. The derailment (*a*), as will be seen by the statement of circumstances given below, was due to a bridge failure. From the conclusions of the coroner's jury which investigated the case there would appear to be reason for making a thorough inquiry not only into the circumstances attending the accident, but also into the design and construction of the bridge and even the surveys and plans which were made to decide the location of the road and its

elevation above the surrounding lands and streams. Such an investigation would have to be made on the ground, of course; not by correspondence from a city 2,000 miles distant.

The collision (e) is one in which the need of a full inquiry is especially important, because it occurred on a road where the block system is in use. The block system is the best means known for preventing collisions of this kind, and when it fails or appears to fail the exact circumstances should be laid before the public to the end that the responsibility for the resulting collision may be clearly understood. The securing of the facts in such a case obviously demands an inquiry on the ground. In the present case it appears that dependence was placed on the rear flagman of the foremost train to go back with hand signals; this as a supplementary safeguard in addition to the block signals; but he failed to do so, or failed to go as far as he ought to have gone. It also appears that the flagman was a person of limited experience in the duties of his position.

The notes following the table of class A accidents cover five of the six cases here referred to, and also several others which are of particular interest.

The total number of collisions and derailments was 2,760 (1,439 collisions and 1,321 derailments), of which 232 collisions and 137 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,439,073. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Num- ber.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	301	\$269,601	49	458
Collisions, butting.....	168	418,997	104	764
Collisions, trains separating.....	218	103,684	4	70
Collisions, miscellaneous.....	752	432,319	53	693
Total	1,439	1,224,601	210	1,985
Derailments due to defects of roadway, etc.....	214	140,277	14	377
Derailments due to defects of equipment.....	686	535,834	16	213
Derailments due to negligence of trainmen, signalmen, etc.....	75	98,930	11	119
Derailments due to unforeseen obstruction, etc.....	90	136,191	109	153
Derailments due to malicious obstruction of track, etc.....	20	60,234	7	60
Derailments due to miscellaneous causes.....	236	243,006	83	470
Total	1,321	1,214,472	190	1,392
Total collisions and derailments.....	2,760	2,439,073	400	3,377

Following is the usual list of class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

Causes of thirty-six prominent train accidents (Class A).

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	M	P. and F ...	4	8	\$2,046	38	Crossing collision; freight cars pushed into passenger train; 4 passengers killed. Conflict of testimony as to whether signalman withdrew clear signal from freight train after it was too late for the train to be stopped.
2	R	F. and F ...	0	2	2,100	51	Operator, 27 years old, with good record, gave clear block signal before preceding train had vacated block. He had fallen asleep and failed to put signal at stop after passage of train.
3	B	P. and F ...	0	26	3,070	33	Extra freight ran on time of regular passenger. Conductor of freight overlooked passenger train on time-table; engineman, new to this run, depended on conductor. These men on duty 18 hours 10 minutes.
4	B	P. and P ...	0	17	3,135	56	Mistake in dispatcher's order; operator, 15 months' experience, delivered order before repeating it back to dispatcher.
5	R	P. and P ...	16	52	3,700	2	Operator gave clear block signal when preceding train was still in the block. (See note in text below.)
6	B	F. and F ...	1	9	4,000	35	Operator, 24 years old, in service 2 months, overlooked order to hold extra train. Order lying on desk, covered by other papers.
7	R	F. and F	0	0	4,150	53	Occurred 5 a. m. in dense fog. Leading train unexpectedly stopped; second train allowed to follow from a block station on caution signal 2 minutes behind the leading train; was not run under control. Men in charge on duty 16 hours and 30 minutes.
8	B	P. and F	2	5	4,400	8	Conductor, engineman, and fireman of empty engine forgot about a passenger train; fireman's experience, 27 days.
9	B	F. and F	2	3	4,400	65	Conductor and engineman misread name of station in meeting order; operator had neglected to require them to read order aloud to him.
10	B	F. and F	0	2	6,086	11	Dispatcher, 18 months' experience, gave meeting order to one train only, disregarding the duplicate rule.
11	R	P. and F	18	183	6,500	3	See note in text below.
12	B	F. and F	0	0	6,500	10	Engineman fell asleep and entered yard too fast; fireman, 22 years old, 3 months' experience, did not think to awaken engineman; assumed until too late that latter was watching speed.
13	B	F. and F	3	1	8,400	13	Men in charge of north bound careless about rights of south bound. (See note in text below.)
14	B	P. and F ...	2	8	9,933	5	Brakeman of freight, 4 a. m., went forward to flag passenger train from opposite direction, but his signal was not seen; torpedoes not used. Brakeman's experience, 9 months on this road; 20 months elsewhere.
15	R	F. and F ...	2	1	10,620	54	Occurred 4 a. m. in dense fog; 5 cars broke away from rear of freight standing at tank and ran back; rear brakeman was on forward part of train.
16	M	F. and F ...	1	5	11,620	19	Engineman of empty engine, north bound, ran on time of regular south-bound train. A conductor and an operator by lax conduct contributed.
17	B	P. and F ...	2	10	14,400	7	In fog, 4 a. m.; freight ran beyond end of double track without right. Engineman claims lost his bearings; fireman's experience, 6 weeks.
18	R	F. and F ...	0	0	15,999	30	Flagman not out far enough.
19	B	P. and P ...	2	50	16,400	57	West-bound train ran past meeting point. (See note in text below.)
20	M	F. and F ...	0	6	16,900	39	South bound entering sidetrack struck by north-bound double-head train.
21	B	F. and F ...	0	6	20,000	6	Freight ran past fixed stop signal and through cross-over into empty passenger train. Engineman, 19 years' experience, asleep. One passenger car and 3 freight cars destroyed by fire started by illuminating gas leaking from tank.
22	B	F. and F ...	0	0	25,000	12	Men in charge of north-bound extra forgot about south-bound regular train.
23	B	P. and P ...	63	162	36,000	58	Conductor and engineman of west-bound train forgot meeting order. (See note in text below.)
24	M	P. and F ...	24	45	65,000	16	Misplaced switch; believed malicious. (See note in text below.)
Total.....			142	601	300,359		

Causes of thirty-six prominent train accidents (Class A)—Continued.

DERAILMENTS.

						Reference to record.	Cause.
1	D	P	0	1	\$480	25	At derailing switch. Track circuit having failed, operator used emergency key to unlock lever; the lock being then out of service, operator allowed signal to indicate clear while derailing switch was open.
2	D	P	8	45	2,750	80	Two rear cars of passenger train, running 50 miles an hour, derailed on straight line. After accident track was out of line, but cause of derailment not determined; no defect found in rails, fastenings or ties, nor in cars.
3	D	P	0	4	8,000	86	At 25 miles an hour, on 8-degree curve, forward truck of tender jumped track. "Unable to locate cause." Elevation of outer rail, 5 inches.
4	D	F	2	3	11,730	84	Runaway on steep grade; entire crew except fireman held responsible. One brakeman had only 7 months' experience. (See note in text below.)
5	D	F	2	0	12,000	47	Occurred 9 p. m.; open draw, signals at stop; engine killed.
6	D	P	2	8	12,000	24	At derailing switch. Engineman and fireman killed. Engineman had received order to run slowly at this point, but was running fast.
7	D	P	0	0	13,000	23	Excessive speed over reverse curve.
8	D	F	0	0	14,800	21	Runaway; cars derailed on bridge, knocking it down. Runaway was started by 3 cars which, unattended, bumped against train in yard.
9	D	P	0	0	17,930	90	Train ran on burning bridge; origin of fire unknown.
10	D	P	88	0	26,309	48	Bridge gave way under train. (See note in text below.)
11	D	P	4	34	31,730	82, 83	Train derailed on trestle and cars fell to stream below. Cause, malicious loosening of rail. All the men on the train being disabled, no danger signal was sent back, and 8 minutes afterwards a train consisting of engine and caboose, following, ran into wreck. Part of the personal injuries due to this second derailment.
12	D	P	0	19	38,670	46	Broken tender wheel, breakage probably due to overheating by brakes sticking, unknown to men on engine. Wreck partly destroyed by fire from gas ignited from light in mail car.
Total derailments.			108	114	190,500		
Total collisions and derailments.			248	715	490,880		

Derailment No. 10 was the wrecking of a passenger train while crossing a trestle, in consequence of the bridge giving way. Eighty-eight persons were killed, the engine and all of the cars of the train except two being swept down by the flood which wrecked the bridge. According to the report of the railroad company, the bridge was knocked down by floating wreckage, which struck it while the train was on the bridge. The report says:

A volume of water more than 20 feet deep came down an arroya which is usually dry, filling the channel and overflowing the banks. It came with such rapidity as to displace the county wagon bridge situated about 1,000 feet up the stream, which wagon bridge was thrown against the railroad bridge with such violence as to force it from its bearings at the very time the train was crossing the stream.

The engine had just reached the embankment on the further side of the stream when the bridge was torn away and the engine fell back into the arroya, lodging on its side. The tank (tender) and the coach, chair car, and baggage car were carried down the arroya a distance of about half a mile; the cars were torn to pieces, and the tank, of steel, was separated from its trucks and was carried still farther down.

The most of the trucks of the wrecked cars were scattered in various places from the bridge down to where the car bodies lodged. There was no water flowing in this arroya when two trains passed over the same bridge less than one hour before the catastrophe, and it was not raining at this point at the time the wreck occurred. In the river into which this arroya empties, half a mile from the bridge, the flow of water below the confluence was 40 cubic feet per second on the morning before the disaster, and it was 1,000 cubic feet per second on the morning after. In the interval it had reached a maximum of 4,000 cubic feet per second.

The road has been operated for thirty-three years and the permanent way has been on practically the same grade and the same alignment across this arroya during all this time. The bridge that was washed away was in thoroughly good condition immediately preceding the accident. The conductor who was in charge of the train had served the company in that capacity twenty-two years and the engineman twenty-one years.

Collision No. 23, killing 63 persons, occurred in daylight, but on a curve where neither of the two enginemen could see the opposing train until close upon it. Both trains were running at high speed. The conductor and the engineman of the west-bound train forgot a meeting order which had been delivered to them about thirty-five minutes before. The engineman was killed in the collision, but there is satisfactory evidence that he had correctly read the order which he had received. He is said to have read the order to the fireman, but this appears to have done no good. The fireman was killed. The conductor simply forgot that he had the order. The conductor thinks that he read the order to the flagman, as he is required by rule to do, but the flagman says that he did not. These two trains were running on long-established schedules and had often met at the station which was prescribed in this case, on orders similar to this one. There were no other trains on this part of the road at this time. The most of the victims of the wreck were passengers riding in two passenger cars of comparatively light construction in the east-bound train, which were between a large and heavy baggage car and a heavy vestibuled passenger car. Behind this vestibuled car were three sleeping cars. The negligent conductor and engineman were men of long experience, good records, and excellent character.

In pointing out that the lesson of this collision—the need of the block system—is one which has been frequently emphasized before,

we are saying only what is obvious to all. The danger involved in running weak or light cars in the middle of a train, the rest of which is composed of heavy and strong cars, is also obvious.

Collision No. 24 occurred to a passenger train, running at high speed, near a station where the switches had no interlocking or distant signals. The train ran over a misplaced switch and collided with freight cars on a sidetrack. The time was about 5 p. m. (daylight). A preceding passenger train running in the same direction had passed over the switch in safety forty-two minutes before. Investigation by officers of the road and by a coroner's jury indicated that the switch had been misplaced by some person or persons unknown. The evidence is not clear as to whether the switch was set for the sidetrack or was left in an intermediate position. Whether this accident was or was not occasioned by a malicious act is perhaps not conclusively shown; but in either case the occurrence illustrates the danger, well known, attending the running of trains at high speed over facing-point switches that are not provided with distant signals.

Collision No. 11 was due to the running of a part of a freight train on the main line from one station to another without having the right to the track; and the error which led to this movement was a mistake in or misunderstanding of hand signals on the part of a brakeman and an engineman. The engineman, who had had only four months' experience on this road, though he had served several years on other roads, absconded the day after the collision. The brakeman had had only five months' experience as such, though he had worked for the same company in a bridge-repair gang for five years. The circumstances of the case may be described as follows, the road being double-tracked: A freight train moving northward from A to B, C, D, E, etc., was detained, near A, by the breaking of a coupling and the separation of the train into two parts. The grade being descending, it was necessary to move the forward part of the train on to station C and put it out of the way before the engine could be run back to bring on the rear portion of the train. At C it was necessary, in order to put these freight cars on a sidetrack, to run them first to the south-bound main track and then to the sidetrack; but having reached the main track, the cars—the engine pushing them southward—were kept moving back toward station B. The brakeman asserts that he endeavored, by hand motion, to prevent the engineman from thus pushing the cars, while the engineman claimed (at the hearing on the next day after the collision) that the brakeman motioned to him to back—that is, to proceed toward B.

In the meantime an excursion passenger train following this freight from the south, and being detained at A by the detached rear portion, reported to the train dispatcher and received from him an order to run northward from A to D on the south-bound track; and while executing this order, after having run nearly to the next station (B), the

passenger train collided with the freight. The train dispatcher, when giving this order, gave an order also that all south-bound trains should be stopped at D; this in order to leave a clear track for the passenger train. The freight train had the right, under the rules, to use the south-bound main track at C to reach the side track, provided flagmen were sent out both north and south to stop approaching trains; but it had no right to move away from C, in either direction, on the south-bound track. It appears that not only did the men in charge of this train disobey the rule against running from station to station without an order from the dispatcher, but also neglected to send a flagman in either direction. The conductor of the train, on arriving at C, went to the telegraph office for orders, and the wrong movements were made by the engineman and the brakeman without his knowledge. This conductor had had seven months' experience as such on this road and twenty years' experience elsewhere. The fireman of this freight train, who had served five years, part of the time as extra engineman, was the only person on the train who had been in the train service of the company more than seven months.

Collision No. 5 occurred in the daytime and at a point less than one-fourth mile beyond a block-signal station, the foremost train having stopped at that point to take water. As soon as this train had passed the block-signal station (station B) the signalman (station agent) gave the prescribed telegraphic signal to the next block station in the rear (station A), and a following passenger train was started from A in about two minutes thereafter. It reached B in about four minutes, or six minutes after the foremost train stopped at the water tank. The operator at B appears to have telegraphed to A without first putting his own outdoor signal in the stop position. This operator was a man of eleven years' experience, with a good record.

The rear flagman of the foremost train, who, according to the rule, should have signaled the following train in season to stop it before it should collide with his own train, did not do so, going back only a short distance, and that apparently after some delay. This flagman was 23 years old and had been in the service seven months. The conductor, who is held responsible for seeing that this flagman performed his duties, has had ten years' experience. His record is not perfect, but appears to have been regarded by the officers of the road as fair.

Derailment No. 4 occurred on a grade of about 2 per cent, some 10 miles long. The train consisted of 36 cars, with air brakes in service on 25 cars. The inspectors reported all in good order at the starting point at the head of the grade. The control of the speed of the train was intrusted to the conductor and brakeman, the engineman being required by rule to use air brakes only in emergencies. After running 2 or 3 miles at high speed the train broke apart behind the nineteenth car. This break is believed to have been due to the breaking

of a wheel, and most of the rear part of the train was wrecked at this point. The forward portion ran several miles farther, when the engine was derailed at a curve and the whole of the cars were wrecked. It is believed that the air brakes were not operative behind the first car, as there is some circumstantial evidence that none of them acted as they should have done, automatically, when the break occurred. It is supposed, therefore, that the angle cock at the rear end of the first car had been closed by some means not discovered. Both conductor and engineman were killed.

Collision No. 2, like No. 5, was due to a failure in block working. Collision No. 7 occurred on a line where block signaling appears to be in force, but it was "permissive blocking." It appears to be clear that the fault lies with the engineman of the second train. The men on this train had been on duty sixteen and one-half hours.

Collision No. 13 illustrates the complicated nature of some of the rules under which trains are run on single-track lines. This case may be described as follows: Extra 324 north and fourth 56 south met in collision north of E, killing 3 men and damaging 2 engines and 21 cars. The stations and distances on this line are as follows:

	Miles.	
A.....	0	North
B.....	7	
C.....	12	
D.....		
E.....	25	
F.....	34	
G.....	70	

There were four sections of train No. 56 from G to E, and there were to have been three sections from E to A. Third 56 was turned at E, where it set off its cars, and engine and crew started for G as an extra before extra 324 arrived. At D extra 324 received an order reading, "Extra 324 has right of track against third 56 D to E. Extra 325 has right of track against third 56 B (E. D. T.) to D." Upon arriving at E, engineman of extra 324 received a meet order with train No. 50 at F; inquired if third 56 had arrived, but asked nothing about signals, and when informed that third 56 had been there, proceeded without any orders. He had met second 56 at C and noted that it carried signals, which plainly showed that there would be a third section of train to C; and from the order that he received at D he knew that extra 325, which was following him, had right of track against third 56 to D. The crew of extra 324 therefore knew that there would be three sections of 56 south of E, and also knew that they had met but two sections. Operator did not notify crew of extra 324 that third 56 had arrived carrying signals, and conductor of the train left his work to the flagman, making no effort to stop train when he knew that he had no right to proceed beyond E.

Collision No. 19 was due to a combination of causes, one of which was unusual. The conductor and engineman of a west-bound train had orders to meet two east-bound passenger trains at a certain station, where the west-bound did not stop. On approaching that station the engineman received from the operator a go-ahead signal by flag, and took this for a clear block-signal, superseding the telegraphic meeting order which he held from the dispatcher. The conductor was busy collecting tickets and the meeting order dropped out of his mind until he reached the station. While passing he imagined he saw two east-bound passenger trains on the side track, though in fact there was only one such train there. The operator who gave the clear flag signal had been stationed at that point temporarily for the purpose of block-signaling trains running in the same direction, without regard to dispatcher's orders concerning the movement of trains running toward each other.

Collisions 4, 6, 8, 9, 10, 16, and 22 were due to mistakes or forgetfulness in connection with telegraphic orders or in reading time-tables. In collision No. 3 the men at fault had been on duty eighteen hours.

TABLE NO. 3.—*Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.) preventing quick work	1	7	.....	12	.....	15	.....	2
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism)	1	12	.....	13	.....	33	.....	.....
3	Other causes, apparently due to defective uncoupling mechanism	.....	1	.....	1	.....	8	.....	.....
4	Defective draft gear, with automatic coupler	.....	1	.....	.....	.....	1	.....	.....
5	Coupling to an engine or tender	1	5	.....	5	1	15	.....	5
6	Same (with link-and-pin coupler)	.....	.....	.....	3	.....	1	.....	.....
7	Coupling on inside of sharp curve	.....	9	.....	3	1	20	.....	.....
8	Foot caught in or between couplers while adjusting coupler	1	10	.....	12	.....	25	.....	.....
9	Slipped, usually on ice or snow	2	4	1	7	2	16	.....	.....
10	Foot caught in frog, guard rail, or switch	3	1	.....	2	7	7	.....	.....
11	Caught by overhanging load (on platform car)	.....	.....	.....	3	.....	1	.....	.....
12	Load shifted	.....	3	.....	1	.....	6	.....	.....
13	Engaged in operations preliminary to coupling	1	28	3	21	2	34	.....	.....
14	While coupling safety chains	.....	.....	.....	1	.....	2	.....	1
15	Link-and-pin coupler	.....	1	1	4	.....	2	.....	.....
16	Link and pin, with automatic	.....	.....	.....	.....	.....	1	.....	.....
17	Coupling damaged cars (presumably an unavoidable risk)	.....	8	2	6	3	8	.....	.....
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism)	.....	10	3	11	.....	24	.....	1
19	Uncoupling, other causes	.....	43	1	20	1	59	.....	6
20	Miscellaneous	2	37	4	31	.....	50	.....	.....
21	Not clearly explained	5	12	6	13	4	19	.....	3
	Total	17	190	21	169	21	344	.....	18

TABLE NO. 4.—Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employ-ees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car		4		5	1	6	1	2
	2 Ice or snow								
	3 Parting of train	2	8	1	2	1	3		2
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3	3	60	4	30	6	56	4	14
	5 While setting brakes		21		24	2	40	2	2
	Fell from—								
	6 Coal car		6		5		3		3
	7 Freight car other than box or coal car		1		3		1		2
	8 Engine or tender	5	50	1	42	4	16		1
	9 Passenger car		6				2		1
C7	10 Engines, tenders, or cars (all kinds) not in motion		41	1	40		11		47
	11 Miscellaneous causes	7	64		30	1	35	3	14
	12 Not clearly explained	31	57	7	18	12	40	4	18
	13 Slipped getting on moving trains or cars	3	85	1	62	4	44	4	73
	14 Jumping off moving trains	4	119		82	3	84	3	62
	15 Jumping from engines or cars anticipating collision, derailment, or other accident	1	27	1	6		11		5
	16 Fell from engines or cars by reason of defective handholds and sill steps	1	23		22		23		1
	17 Getting on or off moving engine	3	123	4	114	5	105	2	37
	18 Caught in frog, guard rail, or switch				1		1		1
	Total	60	605	20	446	30	445	23	245

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties due to operating trains in which air brakes were used on only a portion of the cars.

Bulletin No. 4 has comments on collisions occurring where the trainmen had worked very long hours. In this bulletin a table is given showing the deaths and injuries due to trains parting. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling, as compared with previous quarters.

Bulletin No. 7 contains a note on the cause of a rear collision due to the inadequacy of the time-interval rule.

Bulletin No. 8 explains in detail the causes of two butting collisions. In one of these collisions a conductor gave a hand signal to stop, which was taken by the engineman to mean go ahead. In another case the men in charge of a train read "No. 2" when the order was written "*second* No. 2." This bulletin contains a special list of all the collisions of the quarter, of whatever magnitude, which were caused by mistakes in connection with time-tables or telegraphic orders.

Bulletin No. 9 records two collisions in which 44 persons were killed, one due to careless handling of a telegraphic order and the other to gross negligence of an engineman, who failed to keep the air brakes in working order. Reference is made to the derailment of four fast mail trains by reason of reckless speed.

Bulletin No. 10 records the death of 147 passengers in collisions and derailments—more than three times the average number killed during the nine preceding quarters. One derailment, due to an accidental obstruction, killed 65 pas-

sengers, and six other accidents caused 106 deaths. The causes of the derailment mentioned and of four of the worst collisions are explained at length.

Bulletin No. 11 contains a note on one butting collision which resulted in the deaths of 18 passengers and injuries to 37, the collision being caused by failure to identify a freight train on a side track at night; but aside from this the quarter's totals are in nearly every case less than in preceding quarters. Two costly accidents were caused by air-brake failures which were due to extreme cold weather. Mention is made of a fourth error like that shown in Bulletin No. 8 (readers overlooked the word "second").

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ACCIDENT BULLETIN,

No. 14.

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS

DURING

OCTOBER, NOVEMBER, AND DECEMBER, 1904.

INTERSTATE COMMERCE COMMISSION.

WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1905.

THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

Hon. FRANCIS M. COCKRELL, of Missouri.

EDWARD A. MOSELEY, Secretary.

MARCH 11, 1905.

ACCIDENT BULLETIN No. 14.

RAILROAD ACCIDENTS IN THE UNITED STATES
DURING THE

THREE MONTHS ENDING DECEMBER 31, 1904.

The number of persons killed in train accidents during the months of October, November, and December, 1904, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 242, and of injured 3,298. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 14,978 (951 killed and 14,027 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE No. 1.—Summary of casualties to persons, October, November, and December, 1904.

	Passen- gers.		Trainmen.		Trainmen in yards.		Yard trainmen (switch- ing crews).		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	51	899	68	586	13	242	15	99	21	162	117	1,089
Derailments	2	495	39	252	4	45	6	44	6	54	55	395
Miscellaneous train accidents (excluding the above) in- cluding locomotive boiler ex- plosions.....	.....	36	13	256	2	73	1	37	1	18	17	384
Total train accidents	53	1,430	120	1,094	19	360	22	180	28	234	189	1,868
Coupling and uncoupling .....	.....	.....	24	252	16	181	29	366	2	33	71	832
While doing other work about trains or while attending switches .....	.....	.....	12	1,404	17	708	18	542	26	529	73	3,178
Coming in contact with over- head bridges, structures at side of track, etc.....	4	5	15	144	4	66	2	72	1	19	22	301
Falling from cars or engines, or while getting on or off.....	45	489	72	986	25	607	49	705	35	268	181	2,566
Other causes	12	458	36	128	22	108	23	78	220	2,591	301	2,905
Total (other than train accidents)	61	947	159	2,914	84	1,665	121	1,763	284	3,440	648	9,782
Total, all classes.....	114	2,377	279	4,008	103	2,025	143	1,943	312	3,674	837	11,650

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident are not reported.

The quarterly bulletin issued three months ago (No. 13) and that issued one year ago (No. 10) were both marked by very high casualty records, so that the present one shows well in comparison with either; but the three most serious accidents in the present record caused 48 deaths. These are collisions 17, 22, and 23. The total numbers of employees killed in the various classes—which numbers, when taken for a whole quarter, are but little affected by the notable disasters to passenger trains—will be found to vary both ways from the figures given in the earlier bulletins named; some items have increased, while others have decreased. The total of employees killed in accidents other than train accidents (648) is larger than in the last preceding quarter; but the number of men employed in the train service was doubtless larger. As compared with the October-December quarter one year ago, the present total under this head is smaller.

The total number of collisions and derailments was 2,950 (1,760 collisions and 1,190 derailments), of which 268 collisions and 139 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,406,081. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Number.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	445	\$498,745	43	685
Collisions, butting.....	215	467,793	89	698
Collisions, trains separating.....	307	142,781	4	108
Collisions, miscellaneous.....	793	867,800	82	497
Total.....	1,760	1,476,619	168	1,988
Derailments due to defects of roadway, etc.....	202	134,706	9	306
Derailments due to defects of equipment.....	609	525,340	6	153
Derailments due to negligence of trainmen, signalmen, etc.....	94	62,776	13	101
Derailments due to unforeseen obstruction, etc.....	51	47,234	7	73
Derailments due to malicious obstruction of track, etc.....	19	13,374	1	15
Derailments due to miscellaneous causes.....	215	146,082	21	242
Total.....	1,190	929,462	57	890
Total collisions and derailments.....	2,950	2,406,081	225	2,878

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

Following is the usual list of Class A train accidents; all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed; and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

Causes of thirty-three prominent train accidents (Class A).

[Note.—R. stands for rear collision; B., butting collision; M., miscellaneous collisions; D., derailment; P., passenger train; F., freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Property damaged.	Causes.
1	R	F. and F....	1	1	\$500	47 Operator gave clear block signal when block was not clear. Engineman had control of air brakes on only 7 out of his 19 cars. (See note in text below.)
2	R	F. and F....	2	3	2,140	46 Superintendent reports this as "unavoidable." Leading train had stopped just after emerging from tunnel, because of broken drawbar; flagman heard following train in tunnel, but did not dare enter because tunnel was filled with smoke; regular time interval had been maintained at last station.
3	R	F. and F....	1	1	4,538	4 Train approached yard at uncontrollable speed, 11 p. m.; engineman on duty since 8.45 a. m., after rest of 4 hours following 12-hour trip.
4	R	F. and F....	1	3	5,000	8 One passenger killed. Failure to flag, and poor lookout on engine, flagman on duty 17 hours 30 minutes, with intermission of 1 hour.
5	B	F. and F....	0	7	5,000	34 Engineman forgot meet order; conductor endeavored unsuccessfully to stop train.
6	R	P. and P....	4	35	5,110	25 Four passengers killed. Engineman negligent as to signals when approaching a junction.
7	B	F. and F....	0	6	6,100	57 Confusion of dispatcher's orders. (See note in text below.)
8	B	F. and F....	2	1	7,482	35 Dispatcher (experience, 4 months as dispatcher, 4 years as operator) sent meeting order to only one of the two trains.
9	B	P. and F....	0	10	8,800	31 Pilot on one train overlooked the schedule of the other train.
10	R	F. and F....	0	9	10,628	28 Leading train, entering side track, slightly delayed; following train not under proper control.
11	M	F. and F....	0	1	11,265	68 Collision at crossing of two railroads; air brakes inoperative; had not been tested at beginning of trip. Engineman negligent in not calling for use of hand brakes.
12	B	F. and F....	1	18	11,800	51 Entering side track at meeting point; overran switch and out on to main track.
13	B	F. and F....	3	13	12,000	17 Conductor and engineman of mixed train (1.30 a. m.) disregarded order to wait for opposing train; engineman was killed.
14	R	F. and F....	1	0	13,000	2 Runaway on long descending grade. Air brakes failed, presumably because of closing of train-pipe cock in front part of train from some cause unknown. Conductor and flagman in caboose, men of brief experience, did not respond to whistle signal and did not apply air brakes.
15	B	F. and F....	0	3	15,000	33 Engineman started from station without signal from conductor. Conductor had delivered certain dispatcher's orders to engineman, but afterwards went back and received additional orders, of which he did not advise engineman.
16	R	P. and P....	3	21	16,320	1 Approached station (8 a. m.) at uncontrollable speed.
17	B	P. and F....	30	84	17,581	13 Men in charge of freight neglected to observe signals on passing passenger trains. (See note in text below.)
18	B	F. and F....	0	4	17,600	36 Agent, 2½ months' experience, failed to deliver dispatcher's order.
19	M	P. and P....	0	13	19,000	60 Eastbound ran through crossover and into side of westbound train. Interlocking connections had failed and switch had to be spiked, repairman by mistake spiked it in the wrong position. Personal injuries slight.
20	B	P. and F....	1	11	22,045	11 Conductor and engineman of freight forgot order to meet passenger train.
21	R	P. and F....	1	13	30,350	26 Freight not properly protected at rear by flag. Conductor, engineman, and flagman on duty 18 hours. Torpedoes had been used up; flagman neglected to replenish, had difficulty in lighting fusee.
22	B	P. and F....	10	31	34,200	32 Operator recopying dispatcher's order made it read 1 hour 50 minutes instead of 1 hour 30 minutes. According to rule should have traced second copy from the first.

Causes of thirty-three prominent train accidents (Class A)—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway	Reference to record.	Causes.
23	B	P. and P....	8	25	\$36,300	48	Occurred 3 a. m. Operator (experienced) failed to deliver meeting order; evidently acknowledged the order to the dispatcher without setting his signal in the stop position. Six cars destroyed by fire. Misunderstanding between block-signal operators.
24	R	P. and F....	0	2	37,900	2	
Total, collisions..			69	286	349,860		

DERAILMENTS.

1	D	F.....	2	2	\$4,000	70	Train thrown off track by derailing switch at crossing, 4 a. m.; operator changed signal after train was close to crossing, evidently thinking train was on another (parallel) track. Operator's experience at this place, 3 days; elsewhere, 6 months. At derailing switch, 3 a. m.; engineman and brakeman asleep on engine. Very high speed on curve of 10°; elevation of outer rail, 4 $\frac{1}{8}$ inches; weight of engine, 197,820 pounds. Engineman, who was killed, had satisfactory record up to the beginning of this trip. Injuries to passengers reported "not serious."
2	D	F.....	0	1	5,400	71	
3	D	P.....	1	43	7,125	42	
4	D	P.....	1	7	10,200	22	Burning trestle, 6 a. m.
5	D	P.....	0	45	10,913	65	Broken rail.
6	D	F.....	0	0	11,150	43	Unknown.
7	D	P.....	0	6	15,000	41	Broken wheel: personal injuries slight.
8	D	F.....	0	0	18,900	40	Drawbar broke and fell to the track.
9	D	P.....	1	8	25,000	67	Breakage of cast-iron wheel of baggage car; speed 50 miles an hour; three cars destroyed by fire.
Total, derailments			5	112	107,688	.....
Total, collisions and derailments			74	398	457,548	.....

Collision No. 17, the most disastrous accident in the present record, was between an eastbound passenger train and a westbound freight. It occurred at 4 a. m., and both trains a moment before the collision were moving at about 30 miles an hour. The freight was encroaching on the time of the passenger train in consequence of the failure of its conductor and engineman to observe or heed the green-light signals on a preceding passenger train. The freight train had been waiting on a side track about one hour and forty minutes, and, according to the rules, was to wait there until the passage of the eastbound passenger train *and all of its sections*. On the first section green lights were displayed to indicate that a second section was to follow, but failing to look for these lights the men in charge of the freight started their train out of the side track immediately after the passage of the first section (which did not stop at that point). The conductor and engineman in charge of this freight were both men of experience. The ~~30~~ passengers who were killed were all riding in the foremost

passenger car, which was next to the tender of the engine, there being no baggage car in the train.

In connection with collision No. 22 (causing 10 deaths) the officers of the road state that a rule has been issued requiring that hereafter an operator who, after receiving a telegraphic order needs additional copies of it, must, after writing such additional copies, telegraph them to the dispatcher and receive the dispatcher's "о к."

The third most serious collision, No. 23, killing 8 persons and injuring 25, was due to a failure on the part of a telegraph operator whose experience had extended over several years, but whose service had been intermittent and had been on several different roads.

Butting collision No. 7 resulted from negligence on the part of three or more persons. The third section of a freight train passed the first section without the exchange of dispatcher's orders between the conductors of the two trains, as is required by rule; and a meeting order was thereby nullified. A copy of the meeting order had been sent to the station at which the opposing train should have been met, but the operator at this station, a man of one year's experience, did not display his stop signal. Soon after receiving the order his tour of duty expired and he went off without giving to the operator who relieved him a notice of the existence of the meeting order.

Collision No. 1 occurred about 6 a. m., and the victims were drovers riding in the caboose of the leading train. Although the block-signal operator appears to have been grossly negligent, the collision would not have occurred but for neglect on the part of others. The line of the road was straight. The foremost train having been stopped, the conductor went back with a red light and put one torpedo on the rail, but before he could go farther and put down another torpedo, the second train (19 cars) was upon him. The engineman of this train did not see the conductor's red stop signal until he was very close to it, because of an electric headlight on a passenger train coming from the opposite direction, the rays of which shone directly in his eyes. Of the 19 cars in the second train only 7 had their air brakes coupled so as to be within the control of the engineman. This train had left the last preceding station ahead of time.

Derailment No. 1 appears to have been directly due to the signalman's lack of acquaintance with his surroundings. Though in the service of the company only three days, he was intrusted with the management (in the night) of the signals at a crossing of one road with another where the two lines approached from one direction on parallel lines close to each other. Derailment No. 3 appears to have been due to a reckless disregard of regulations.

TABLE NO. 3.—Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.

Sub-class.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Sticking of parts (bent pins, etc.) preventing quick work	1	17	....	14	2	13	....	....
2	Holding up pin by hand (presumably made necessary by defective uncoupling mechanism) .....	....	12	....	12	1	25	....	1
3	Other causes, apparently due to defective uncoupling mechanism .....	....	2	....	1	....	5	....	....
4	Defective draft gear, with automatic coupler .....	....	2	....	....	....	3	....	1
5	Coupling to an engine or tender	1	7	1	11	1	16	....	6
6	Same (with link-and-pin coupler) .....	....	2	....	....	....	....	....	....
7	Coupling on inside of sharp curve .....	....	9	....	3	3	22	....	....
8	Foot caught in or between couplers while adjusting coupler .....	....	16	....	15	....	14	....	1
9	Slipped, usually on ice or snow	1	6	1	7	2	11	....	1
10	Foot caught in frog, guard rail, or switch	4	4	3	1	5	6	....	....
11	Caught by overhanging load (on platform car) .....	....	7	....	1	....	3	....	....
12	Load shifted	1	3	....	3	1	....	....	1
13	Engaged in operations preliminary to coupling	5	31	2	18	2	53	....	3
14	While coupling safety chains .....	....	1	....	....	....	2	....	1
15	Link-and-pin coupler .....	....	1	....	....	....	1	....	....
16	Link and pin, with automatic .....	....	....	....	2	....	2	....	2
17	Coupling damaged cars (presumably an unavoidable risk) .....	....	7	4	8	1	6	2	2
18	Uncoupling without using lever (presumably by reason of defective uncoupling mechanism)	1	16	....	9	3	17	....	2
19	Uncoupling, other causes	2	58	2	26	1	76	....	5
20	Miscellaneous	4	35	....	34	2	60	....	6
21	Not clearly explained	4	16	3	16	5	31	....	1
	Total	24	252	16	181	29	366	2	33

TABLE NO. 4.—Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Sub-class.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car .....	....	6	....	6	1	8	....	2
	2 Ice or snow	2	13	....	11	....	14	....	....
	3 Parting of train .....	....	4	....	6	....	9	....	1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3	4	75	3	61	7	86	4	18
	5 While setting brakes	4	25	....	14	2	43	2	6
	Fell from—								
	6 Coal car .....	....	4	....	3	1	5	....	2
	7 Freight car other than box or coal car .....	....	6	....	8	....	....	1	3
	8 Engine or tender	7	85	2	49	2	27	....	8
	9 Passenger car .....	....	6	....	....	....	1	....	5
10	Engines, tenders, or cars (all kinds) not in motion .....	....	78	....	56	2	14	....	28
11	Miscellaneous causes	2	78	3	43	6	60	3	9
12	Not clearly explained	37	82	12	28	14	44	13	26
C7	13 Slipped getting on moving trains or cars	2	105	....	58	1	63	6	47
	14 Jumping off moving trains	3	181	1	100	4	151	2	52
	15 Jumping from engines or cars anticipating collision, derailment, or other accident	3	38	....	14	....	13	1	11
	16 Fell from engines or cars by reason of defective handholds and sill steps	1	22	....	23	....	33	....	2
	17 Getting on or off moving engine	7	178	4	127	8	132	3	48
	18 Caught in frog, guard rail, or switch .....	....	....	....	....	1	2	....	....
	Total	72	986	25	607	49	705	35	263

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties due to operating trains in which air brakes were used on only a portion of the cars.

Bulletin No. 4 has comments on collisions occurring where the trainmen had worked very long hours. In this bulletin a table is given showing the deaths and injuries due to trains parting. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling, as compared with previous quarters.

Bulletin No. 7 contains a note on the cause of a rear collision due to the inadequacy of the time-interval rule.

Bulletin No. 8 explains in detail the causes of two butting collisions. In one of these collisions a conductor gave a hand signal to stop, which was taken by the engineman to mean go ahead. In another case the men in charge of a train read "No. 2" when the order was written "*second* No. 2." This bulletin contains a special list of all the collisions of the quarter, of whatever magnitude, which were caused by mistakes in connection with time-tables or telegraphic orders.

Bulletin No. 9 records two collisions in which 44 persons were killed, one due to careless handling of a telegraphic order and the other to gross negligence of an engineman, who failed to keep the air brakes in working order. Reference is made to the derailment of four fast mail trains by reason of reckless speed.

Bulletin No. 10 records the death of 147 passengers in collisions and derailments—more than three times the average number killed during the nine preceding quarters. One derailment, due to an accidental obstruction, killed 65 passengers, and six other accidents caused 106 deaths. The causes of the derailment mentioned and of four of the worst collisions are explained at length.

Bulletin No 11 contains a note on one butting collision which resulted in the deaths of 18 passengers and injuries to 37, the collision being caused by failure to identify a freight train on a side track at night; but aside from this the quarter's totals are in nearly every case less than in preceding quarters. Two costly accidents were caused by air-brake failures which were due to extreme cold weather. Mention is made of a fourth error like that shown in Bulletin No. 8 (readers overlooked the word "second").

Bulletin No. 12 records one derailment, killing 7 passengers, due to the failure of an engineman to reduce speed on entering a side track, according to a telegraphic order which had been delivered to him. This bulletin contains summaries of the casualties, collisions, and derailments for the three years ending June 30, 1904.

Bulletin No. 13 records the death of 228 passengers in collisions and derailments—a number far greater than had been reported in any previous quarter. One derailment caused the death of 88 persons (passengers and employees); one collision, 63; another, 24; another, 18; and a fourth, 16. The circumstances of these unusually serious accidents are given in detail. One of these collisions, and another not so disastrous to life and limb, occurred under somewhat unusual circumstances, due to the complicated nature of the regulations under which the trains were run.

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NO. 15
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1905

ACCIDENT BULL

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No. 15.

JANUARY, FEBRUARY, AND M

U. S. INTERSTATE COMMERCE COM
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE
1905.

THE INTERSTATE COMMERCE COMMISSION.

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Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

Hon. FRANCIS M. COCKRELL, of Missouri.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN NO. 15.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING MARCH 31, 1905.

The number of persons killed in train accidents during the months of January, February, and March, 1905, as shown in reports made by the railroad companies to the Interstate Commerce Commission under the "accident law" of March 3, 1901, was 232, and of injured 3,713. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 909 killed and 14,397 injured. These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE NO. 1.—Summary of casualties to persons—January, February, and March, 1905.

	Passen- gers.		Trainmen.		Train- men in yards.		Yard trainmen (switch- ing crews).		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	18	834	66	533	14	252	15	137	9	182	104	1,104
Derailments	9	794	48	350	6	51	6	58	10	57	70	516
Miscellaneous train accidents, including locomotive boiler explosions	1	23	21	276	6	102	1	36	2	28	30	442
Total train accidents	28	1,651	135	1,159	26	405	22	231	21	267	204	2,062
Coupling and uncoupling			16	195	16	170	27	406	3	19	62	790
While doing other work about trains, or while attending switches			19	1,453	12	773	16	595	18	654	65	3,475
Coming in contact with over- head bridges, structures at side of track, etc.		3	13	116	4	83	4	95		9	21	303
Falling from cars or engines, or while getting on or off	24	317	76	933	19	624	32	708	28	275	155	2,540
Other causes	12	343	88	114	27	136	29	88	244	2,575	338	2,913
Total (other than train accidents)	36	663	162	2,811	78	1,786	108	1,892	293	3,532	641	10,021
Total, all classes	64	2,314	297	3,970	104	2,191	130	2,123	314	3,799	845	12,083

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident are not reported.

ACCIDENT BULLETIN,

No. 15,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND


CASUALTIES TO PERSONS

DURING

JANUARY, FEBRUARY, AND MARCH, 1905.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1905.



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Hon. JOSEPH W. FIFER, of Illinois.

Hon. FRANCIS M. COCKRELL, of Missouri.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN NO. 15.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING MARCH 31, 1905.

The number of persons killed in train accidents during the months of January, February, and March, 1905, as shown in reports made by the railroad companies to the Interstate Commerce Commission under the "accident law" of March 3, 1901, was 232, and of injured 3,713. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 909 killed and 14,397 injured. These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE NO. 1.—Summary of casualties to persons—January, February, and March, 1905.

	Passen- gers.		Trainmen.		Train- men in yards.		Yard trainmen (switch- ing crews).		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	18	834	66	533	14	252	15	137	9	182	104	1,104
Derailments	9	794	48	350	6	51	6	58	10	57	70	516
Miscellaneous train accidents, including locomotive boiler explosions	1	23	21	276	6	102	1	36	2	28	30	442
Total train accidents	28	1,651	135	1,159	26	405	22	231	21	267	204	2,062
Coupling and uncoupling			16	195	16	170	27	406	3	19	62	790
While doing other work about trains, or while attending switches			19	1,453	12	773	16	595	18	654	65	3,475
Coming in contact with over- head bridges, structures at side of track, etc.		3	13	116	4	83	4	95		9	21	303
Falling from cars or engines, or while getting on or off	24	317	76	933	19	624	32	708	28	275	155	2,540
Other causes	12	343	88	114	27	136	29	88	244	2,575	338	2,913
Total (other than train accidents)	36	663	162	2,811	78	1,786	108	1,892	293	3,532	611	10,021
Total, all classes	64	2,314	297	3,970	104	2,191	130	2,123	314	3,799	845	12,083

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident are not reported.

The totals in this table are not strikingly different from those in Bulletin No. 11, covering the same quarter of the preceding year, though there is a decrease of 12 in the number of passengers killed in train accidents. In this item Bulletin No. 11 was swelled by one collision which killed 18 persons. In the present record the largest passenger death list was that of collision No. 24, in which 7 were killed. Particulars of this and other collisions are given below. Coupling accidents, while fewer than one year ago, do not show any marked falling off in fatalities. From the details of "coupling accidents," as given in Table 3, on a following page, it is evident that a considerable percentage of the injuries classed under this head are of a kind not peculiar to this department of work, but are due to causes which occur, and probably to about the same extent, in other kinds of work.

The total number of collisions and derailments was 3,108 (1,787 collisions and 1,321 derailments), of which 284 collisions and 177 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,449,248. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Num-ber.	Loss.	Persons killed.	Persons injured.
Collisions:				
Rear	511	\$473,785	44	634
Butting	203	350,704	47	650
Trains separating.....	252	90,754	2	109
Miscellaneous.....	821	343,834	29	545
Total.....	1,787	1,259,077	122	1,938
Derailments:				
Due to defects of roadway, etc	334	328,326	19	506
Due to defects of equipment.....	598	439,354	7	234
Due to negligence of trainmen, signalmen, etc	72	43,744	7	70
Due to unforeseen obstruction of track, etc	92	113,968	19	165
Due to malicious obstruction of track, etc.....	11	20,240	3	46
Due to miscellaneous causes.....	214	244,539	24	289
Total.....	1,321	1,190,171	79	1,310
Total collisions and derailments.....	3,108	2,449,248	201	3,248

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

Derailments at derailing switches caused losses of \$18,652 in this quarter, and of \$29,735 in the quarter last preceding (not including personal injuries and losses of merchandise). In the present quarter two of these derailments are charged to the fault of the tower man; one to a runaway, due to bad management of the air brakes by the engineman; one to the freezing of a distant signal in the clear position, and one to a defect in the derailing switch. Other cases are reported as due to the more ordinary kinds of carelessness. In one instance the engineman had been on duty twenty hours. In the list for the

preceding quarter (three months ending December 31, 1904), two derailling switch accidents were reported as due to the engineman falling asleep. In another the engineman mistook the signal light; the light which should have guided him had been accidentally extinguished, but he saw some other light, which he took to be the signal light. One case was due to bad hand signaling, and in one case a signalman changed the position of a derailling switch when the train was too near to it. This signalman was 18 years old.

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

Causes of forty prominent train accidents (Class A).

[NOTE.—R. stands for rear collision; B., butting collision; M., miscellaneous collisions; D., derailling; P., passenger train; F., freight and miscellaneous trains.]

No.	Class.	Kind of train.	Killed.			Cause.
COLLISIONS.						
1	R	F. and F.....	4	2	\$700	7 Empty engine ran into rear of standing freight, killing 4 passengers in caboose; caboose took fire and, with occupants, was burned up. The standing train was not properly protected, and the approaching engine was running at excessive speed.
2	R	F. and F.....	3	1	700	64 Freight, standing at water tank, run into by following freight approaching at unauthorized speed; 3 passengers in caboose killed.
3	B	P. and P.....	1	8	2,300	29 Dispatcher's meeting order incorrectly copied by 1 of 8 operators, though repeated to dispatcher correctly. Stop signal was displayed at meeting point, but engineman holding the incorrect order ran past this signal 400 feet; dense fog.
4	B	P. and F.....	2	3	3,064	61 Both enginemen and both firemen of "double-head" freight forgot about passenger train; these men on duty 19 hours.
5	B	P. and F.....	0	7	3,133	31 Operator (4 months in this place and 4 months' experience in telegraph work elsewhere) delivered clearance card instead of meeting order. This operator (at the meeting point) was to have delivered clearance to the other train if it had arrived first. In sending a meeting order to the meeting point the dispatcher should direct the operator to take special precautions, but failed to do so.
6	B	P. and F.....	0	6	4,700	10 Two engines coupled together, going to assistance of passenger train stalled in snow, collided with passenger train. Passenger brakeman had placed torpedo signals, but these were not heard. He is censured for not using fuses also. The engines, however, had been notified by one flagman some distance back.
7	B	F. and F.....	2	2	4,800	62 Operator (in service 3 weeks, experience elsewhere, 1 year) wrote name of wrong station in meeting order.
8	R	F. and F.....	0	1	5,000	6 Engineman (50 years old), intoxicated, ran at excessive speed and did not heed flag.
9	B	F. and F.....	0	2	5,000	36 Operator neglected to deliver order. Both engines had electric headlights, and 1 engineman admitted that he had seen the light of the other train several miles away, but thought that it was on a sidetrack.
10	M	F.....	0	0	5,100	39 Part of train left standing on grade without hand brakes set.

Causes of forty prominent train accidents (Class A)—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
COLLISIONS—continued.							
11	B	P. and F.....	0	7	\$5,118	32	Passenger train, stuck in snow, did not send flag ahead. Freight engineman ran unreasonably fast, having been informed about passenger train.
12	B	F. and F.....	0	1	5,800	34	Block-signal operator, 16 years' experience, turned eastbound freight into siding against westbound empty engine (standing), having forgotten about presence of empty engine.
13	R	F. and F.....	0	2	6,656	27	Engineman approached yard at unauthorized speed; on duty 22 hours 35 minutes; 9 locomotives damaged.
14	M	P. and F.....	1	1	6,800	66	Freight encroached on time of passenger train; men at fault on duty 18 hours.
15	B	P. and F.....	0	19	7,300	33	Block-signal operator gave yard engine time against passenger train after dispatcher had refused to do so; passenger train approached at unauthorized speed.
16	B	F. and F.....	0	6	7,600	35	Conductor and engineman disregarded meeting order; reported by railroad company as "criminally responsible." (See note in text below.)
17	B	F. and F.....	1	4	7,800	12	Conductor, engineman, and brakeman failed to identify train on sidetrack. (See note in text below.)
18	B	P. and F.....	2	23	10,800	57	Engineman of eastbound freight encroached on time of westbound passenger, having "gained the impression" that he had 3 hours 30 minutes against it when he had only 30 minutes. Conductor did not act promptly to stop train.
19	R	P. and F.....	2	6	13,175	1	Passenger train, without headlight, collided with engine standing in yard without red lights displayed.
20	R	P. and F.....	1	5	13,900	2	Freight encroached on time of passenger train in consequence of failure of two watches. (See note in text below.)
21	B	P. and F.....	3	12	14,200	8	Freight encroached on time of passenger train in dense fog; conductor relied on another conductor to flag him to the meeting point, but the other conductor claims he had not accepted that responsibility.
22	B	F. and F.....	4	6	15,731	21	"Double-head" freight train ran past meeting point. (See note in text below.)
23	B	F. and F.....	2	3	19,635	63	Engineman fell asleep and ran past meeting point. (See note in text below.)
24	R	P. and P.....	7	142	44,000	51	7 passengers killed, some of them suffering from fire; engineman, running at high speed at night, ran past distant signal without observing its position, and then ran 900 feet past home signal, striking preceding train, which had been stopped because of a hot journal.
Total			35	269	213,012		
DERAILMENTS.							
1	D	F.....	5	1	800	49	Excessive speed; work train running with tender first.
2	D	P.....	0	2	2,775	17	Derailing switch open; distant signal (9 p. m.) frozen in clear position; signalman negligent.
3	D	F.....	1	2	3,900	68	Track distorted by solar heat (Mar. 29).
4	D	P.....	1	1	9,148	73	Landslide; watchman had passed over track just before; damage partly due to fire; gas tank exploded.
5	D	F.....	0	0	10,000	42	Flange of wheel of tender broken.
6	D	P.....	0	8	11,000	78	Unexplained; speed 35 miles an hour; tender derailed on good track.
7	D	P.....	1	13	12,400	76	Rails maliciously loosened.
8	D	P.....	0	1	14,725	74	Burning bridge (3 p. m.).
9	D	P.....	0	30	15,741	18	Rock fell on track (night).
10	D	P.....	0	19	18,700	15	Broken 80-pound rail; 12 years old; internal flaw.
11	D	F.....	1	0	19,800	24	Runaway (4 trespassers killed). (See note in text below.)
12	D	F.....	0	0	20,000	16	Broken wheel; wheel excessively heated by brakes; defective casting.

Causes of forty prominent train accidents (Class A)—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
		DERAILMENTS—continued.					
13	D	P	0	56	\$22,500	48	Baggage car of rapidly moving train blown off track by explosion of boiler of engine of another train passing in opposite direction on adjacent track.
14	D	P	1	20	25,360	77	Excessive speed on curve. Engineman was making his first trip over this division; had made 20 round trips to learn the road.
15	D	F	3	1	25,500	20	Runaway; men in charge of train had neglected to test brakes at head of grade; depended partly on hand brakes, but did not apply them soon enough. The first brakeman on the train had had 9 months' experience; the second, 6 months, and the third, none.
16	D	P	1	40	65,000	41	Broken rail at entrance to bridge; 8 cars and bridge destroyed. Rail, 85-pound, 3 years old, was split longitudinally for 5 feet; internal defect. Train, running about 50 miles an hour, drawn by 2 heavy Atlantic-type engines.
Total			14	194	277,349		
Total collisions and derailments			49	463	490,361		

The most notable accident in this list, collision No. 24, occurred on a road thoroughly equipped with automatic block signals, the cause being bald inattention to signals on the part of an engineman whose record had been good. For about 12 miles this engineman, running at high speed, closely following the other passenger train, had encountered successive signals about three-fourths of a mile apart, all indicating "all right." As he approached the distant signal which was against him, that signal was obscured by the smoke from a locomotive on another track, and he passed the signal without knowing its indication. He gives no satisfactory explanation of this, from which the conclusion is drawn that he had assumed that the signal indicated "all right," with no other ground for such assumption than that he had found the preceding signals "all right." But he knew that he had passed a distant signal, and thus was bound to prepare to stop at the home signal. Not only did this man ignore the distant signal, but evidently after passing it he allowed his attention to be drawn away, for he did not observe the home signal until he was quite near to it. The distant signal which was obscured by smoke ought to have been seen by the engineman 1,070 feet before reaching it.

The fireman of this engine, who ordinarily watches for signals when practicable, had seen all the signals for several miles, but at this particular point he was engaged in putting coal into the fire box and did not give his attention to the signal. The fire in this wreck broke out in less than one minute after the collision. It was rapidly spread by gas

escaping from broken pipes beneath the cars, and was started, no doubt, by the ignition of this gas by the fire in the wrecked locomotive or the flames of the lamps or by friction. The three rear cars of the foremost train and the three leading cars of the second train were burned up.

In collisions No. 1 and No. 2, taken together, 7 passengers were killed while riding in caboose cars attached to the rear of freight trains. In connection with these cases it may be observed that it has long been generally recognized that the lives of passengers are not so safe on freight trains as on passenger trains.

In three of the accidents in this list the men at fault had been on duty for an excessive length of time; in one case, 19 hours; in another, 22 hours 35 minutes, and in a third, 18 hours.

Collision No. 8, due to the reckless conduct of an engineman who was intoxicated, is the first case of this kind which has come to notice since the accident records have been kept.

In collision No. 16, a butting collision between two heavy freight trains, eastbound train No. 8 received orders to meet westbound No. 5 at A and No. 7 at B. On arrival at A, No. 5 was met, and the eastbound (No. 8) immediately received a second order to meet No. 7 at A instead of B, and to meet second No. 7 at B. The conductor and engineman read and signed this order, and then immediately went to their train and started out, utterly disregarding the order. The conductor and engineman claim to have been under the impression that they were to meet only one train at A, but this one train was met before they received the second order. The fireman of No. 8 was disciplined for failing to read the order when it was handed to him by the engineman. This fireman's experience was one year. The conductor and engineman had each had several years' experience.

Collision No. 17 was due to the failure of the men on train No. 1, west bound, to identify an eastbound train standing on a side track. The fireman of the westbound, holding a lantern in his hand, stood in the gangway of the engine as, moving at about 5 miles an hour, it passed the engine standing on the side track. On account of escaping steam he was unable to see the number distinctly, but was satisfied that it was not the number which he was looking for (that of the engine of train No. 2). Failing to get the desired information, but wishing to save time by avoiding a stop, the engineman of No. 1, on passing the caboose of the standing train, asked the flagman, who was in the cupola, if his train was No. 2, and the flagman is claimed to have replied "yes." The flagman, however, says that he did not understand the question, did not answer "yes," and merely tried to get the engineman to repeat his question.

Collision No. 20 was due to a miscalculation of time, and both the engineman's and the conductor's watches were out of order. The conductor's was nineteen minutes slow, and the engineman's had stopped

at 10.56 a. m. by the minute hand being blocked by the hour hand. The engineman was fatally injured. The conductor's watch had on the previous day been thrown violently to the ground by an accident. When picked up it was running, in apparently good condition, but the conductor had not afterwards compared it with any other timepiece. Furthermore, the conductor and engineman had neglected to compare the time by their watches when they received the meeting order.

In collision No. 22 the train which overran the meeting point—the eastbound—was drawn by two engines, and the enginemen of both these engines disobeyed the meeting order. The engineman and fireman of the second engine were killed. All four men on the engines had also disregarded the rule forbidding a train to pass a passing track without receiving an “all right” signal from the conductor. The surviving engineman had “got the impression” in his mind that the meeting order specified another station 5 miles beyond. There was no reason or excuse for this impression, and he gives no explanation of it. His conversation with the operator at the time he received the order was such as to prove that he had read it correctly. He was unable to state positively that he had read the order to his fireman. The fireman admits that he did not read the order, though both claim that their habits in this matter had been correct. Both trains held orders to meet at W. As the eastbound was approaching W. the station signal was sounded by one of the enginemen, and the stop signal was given by the flagman, under direction of the conductor. The signal was answered from the engine, but the train did not reduce speed; and the conductor, seeing that they were going to pass the station, had the flagman get out on top of the train and endeavor to give an effective stop signal to the enginemen. He failed to get them to notice his signal, and his lamp went out. On account of the speed of the train and the possibility of meeting the opposing train at any moment, the flagman and conductor were afraid to attempt to go over the seven nonair cars in order to open the angle cock and apply the air brake. The conductor is held at fault for failing to have his three brakemen in the proper positions on the train to pass along the hand signals when approaching a meeting point. These brakemen were also at fault for not being in proper positions on the train.

Collision No. 23 occurred about 5 a. m., and was caused by one of the freight trains running past a sidetrack, where it should have waited for the train from the opposite direction. The engineman of this train had fallen asleep and a brakeman on the engine with him (who was killed) probably also had fallen asleep. The fireman of the train was not sufficiently familiar with the road to know that he was running past a station, there being no station lights at the point in question. The engineman had been awake about three minutes before the collision. The report of the railroad company says that he had

voluntarily overworked himself, failing to ask for rest, and concealing the actual facts from his superior officers. After a run of 14 hours, preceded by a short rest, he lay off for 2 hours 55 minutes, and then entered upon the run of 10 hours which terminated in the collision. At the end of his 14-hour run he told the roundhouse foreman that if needed to go back he would be ready to go whenever called.

The fireman had been on the road only three months, including the time spent in learning. He also had worked the excessive hours above mentioned. The brakeman who was killed on the engine had had eight months' experience. The conductor tried to signal the engine-man to stop, but, as before stated, the brakeman on the engine, who should have seen this signal, was probably asleep. The conductor and one of his brakemen, the latter of eight months' experience, neglected to make proper effort to apply the air-brake valve on one of the freight cars in the train.

Derailment No. 11 was a runaway of a train over 10 miles of a crooked road. It was due to the negligence of trainmen in leaving the cars of the train standing on a grade without having enough hand brakes applied to keep them from moving. The train was stopped in a tunnel by the bursting of an air-brake hose. While making repairs a new trainman was overcome by gas and smoke, and the engine had to be detached from the cars to carry this brakeman out of the tunnel to save his life. While the engine was detached the air leaked out from the brake cylinders of the cars in the train and this caused the runaway. When the cars struck the engine (which had started to return) the engineman was knocked off and the fireman jumped off. The conductor of the train did not board it when it started, for the reason that he also had been overcome by gas. On 8 or 9 cars the hand brakes had been set before entering the tunnel, but these were not enough to hold the train. After running 10 miles, on a 1 per cent grade, the train was derailed on a curve of 10° where the outer rail was elevated 7 inches. The engine and 34 cars were destroyed. The fireman who jumped off had been in the employ of the company two months.

Table No. 3, given below, showing details of accidents to employees in coupling and uncoupling cars, has been changed and amplified so as to show more clearly the circumstances under which the injuries occurred.

The subclassification in this table is designed to separate, as far as practicable, those accidents which are due to the employee's own carelessness, defective judgment, or disobedience of rules from those which are due to faults in the couplers or to noncompliance with the law by the railroad company. In a large part of the cases it is impossible to classify perfectly, as two or more causes contribute to the accident. For example, some cases fall into subclass 24 without ques-

tion; in others the circumstances are such that doubt arises. In subclass 14 some cases are clearly due to recklessness; in other cases the man was one of reasonably cautious habits, and his error is to be classed simply as misadventure. Cases in subclass 11 are sometimes due to palpably blameworthy conduct on the part of the injured person, and sometimes to hurried work, which a jury would readily class as excusable, if not justifiable. Other considerations like those here mentioned will occur to the reader in connection with some other subclasses.

Subclass 27 includes cases which it has been difficult or impossible to classify. Some of these ought possibly to go into subclass 4 (cars not equipped with automatic couplers), and in other cases the man appears to have been only indirectly connected with coupling operations, and the accident should have been put into some other class; but it has been impossible as yet to fully clear up the facts of these cases by correspondence.

TABLE NO. 3.—*Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		11		9		18		
2	Adjusting coupler, cars accidentally started.....		7	1	11		18		
3	Careless manipulation of uncoupling lever.....		3		2		3		
4	Cars not equipped with automatic coupler.....		3		2		5		1
5	Coupler broken, using link and pin, or chain.....		5		4	2	6		1
6	Coupling damaged cars.....		7		13	3	8		4
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		2				5		
8	Coupling with chain or other emergency appliance because of uneven track.....								1
9	Coupling or uncoupling safety chains.....		1		2		11		2
10	Fingers or hand caught between uncoupling lever and body of car.....		41		32		73	1	2
11	Uncoupling without using lever (unnecessary).....		7		4		18		
12	Uncoupling without using lever, uncoupling lever not in working order.....	1	20	1	12	3	54		2
13	Foot caught in frog, switch, or guard rail.....	3	4		4	4	6		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	3	12	1	10	2	21		1
15	Opening knuckle when cars were near together, engine accidentally started.....		2		2	2	6	1	1
16	Opening knuckle, part of defective coupler fell on foot.....		2		5		11		
17	Opening knuckle, lost footing.....		3	2			7		
18	Riding on car to uncouple, slipped off.....	1	2		1		1		
19	Struck by object at side of track.....		5		5		24		1
20	Caught by unexpected movement of car, due to slack running in.....	2	14	2	18	2	27		3
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....		1		2		1		
22	Uncoupling moving cars and lost footing.....	1	20	1	11	2	23		
23	Parts hard to move, causing delay.....		12		8		20		
24	Went between cars unnecessarily and contrary to rule.....		3	3	2	1	10		
25	Hand caught between projecting load and end of next car.....		4		3		1		
26	No witness (fatal injury).....	5		5		5		1	
27	Other causes (see detailed list below).....		3		8	1	24		
28	Unexplained.....		1				5		
Total.....		16	195	16	170	27	406	3	19

Details of injuries included in Table 3, subclass 27.

- 1 J. Coupling cars on scale track; fell off trestle.
- 2 J. Coupling engine to car (Thurmond and Miller couplers); finger lacerated.
- 3 J. Pilot of engine broke a brake beam; man was knocked against a shed.
- 1 F. Climbing down between cars; squeezed.
- 2 F. Driving pin out of knuckle preparatory to coupling car; struck thumb.
- 3 F. Pulling out broken pin; finger caught.
- 4 F. While cutting cars, wheel ran over foot.
- 5 F. Stooped over to hook up cut-off chain; head caught between cars.
- 6 F. Uncoupling; glove caught, causing man to fall on track; body bruised.
- 7 F. Acid from tank car splashed out through manhole, burning face and neck.
- 8 F. In the act of replacing a knuckle, cars moved up, catching his hand.
- 9 F. Standing on footboard of engine; squeezed between sills of engine and car.
- 10 F. Coupling engine to car; caught between sills of engine and car.
- 11 F. Cutting engine from car; caught hand on hook of engine.
- 12 F. Slipped on ice, cutting knee.
- 13 F. Uncoupling engine from coach; coach split switch, catching man between end sill of engine and corner of coach.
- 14 F. Uncoupling; stepped on stone, spraining ankle.
- 15 F. Hand crushed between drawhead of engine and dead block of snow plow.
- 16 F. Foot caught by wheel while uncoupling.
- 17 F. Coupling cars; struck knee, causing contusion.
- 18 F. Leg caught and injured.
- 19 F. Coupling on a curve; drawbars passed, squeezing him.
- 20 F. Foot caught on frozen stone; ankle sprained.
- 21 F. Coupling an engine; foot caught on pilot.
- 22 F. Finger caught between drawbars.
- 1 M. Jar caused footboard on hopper car to strike man in the back.
- 2 M. (Fatal.) Reaching to hook chain of uncoupling lever; head caught between sills.
- 3 M. Caught on inside of curve and bruised.
- 4 M. Coupling cars; slipped, and in falling hand caught in bumpers.
- 5 M. Gave signal to kick cars; grabbed lever with both hands; in so doing got partly between cars and was struck on back by lever.
- 6 M. Jumped down to cut car and landed on a nail; foot injured.
- 7 M. Foot caught under wheel while switching.
- 8 M. Piece of iron fell off car and struck man on hand.
- 9 M. While uncoupling cars broken lever fell on finger.
- 10 M. Coupling cars on curve; caught between coaches and shoulder bruised.
- 11 M. Fell; arm caught between drawbars.
- 12 M. Coupler broke and struck man on nose.

TABLE NO. 3A.—*Nature of injuries to employees in coupling and uncoupling cars, January, February, and March, 1905.*

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other employees.
Loss of feet	1	1	2	.....
Loss of legs	4	1	.....	.....
Loss of arms	3	3	1	.....
Loss of hands	1	3	1	.....
Loss of fingers	9	6	11	2
Loss of toes .....	.....	.....	2	.....
Fractured skull .....	.....	.....	.....	.....
Fractured leg .....	.....	.....	2	1

TABLE NO. 3A.—*Nature of injuries to employees in coupling and uncoupling cars, January, February, and March, 1905—Continued.*

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other employees.
Fractured arm.....	2	3	3	.....
Fractured collar bone or ribs.....	4	5	7	1
Fractured, other bones.....	4	3	4	1
Contusion of head or body.....	16	20	59	4
Contusion or laceration of feet.....	19	15	27	.....
Contusion or laceration of toes.....	2	4	9	.....
Contusion or laceration of legs.....	3	3	22	.....
Contusion or laceration of arms.....	10	7	14	.....
Contusion or laceration of hands.....	27	25	50	3
Contusion or laceration of fingers.....	77	52	148	4
Dislocation.....	.....	.....	.....	.....
Internal injuries.....	8	6	21	1
Sprains.....	7	6	13	1
Shock.....	1	1	.....	.....
Miscellaneous.....	2	6	10	1
Total injuries.....	195	170	406	19
Killed.....	16	16	27	3
Total killed and injured.....	211	186	433	22

RECAPITULATION.

Killed.....	62
Injured.....	790
Total killed and injured.....	852

TABLE NO. 4.—*Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Train-men.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	1	4	.....	2	.....	4	.....	1
	2 Ice or snow.....	1	30	.....	20	1	10	.....	3
	3 Parting of train.....	.....	7	.....	6	.....	12	.....	.....
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	4	65	1	55	2	78	2	12
	5 While setting brakes.....	5	39	2	28	3	45	.....	1
	Fell from—								
	6 Coal car.....	1	8	1	5	.....	7	1	7
	7 Freight car other than box or coal car.....	.....	1	.....	.....	.....	1	.....	1
	8 Engine or tender.....	10	105	1	44	1	57	.....	10
C7	9 Passenger car.....	.....	5	.....	4	.....	1	1	3
	10 Engines, tenders, or cars (all kinds) not in motion.....	.....	67	.....	70	.....	34	2	49
	11 Miscellaneous causes.....	3	83	.....	33	2	53	1	16
	12 Not clearly explained.....	35	71	5	18	11	30	5	15
	13 Slipped getting on moving trains or cars.....	9	81	3	44	5	65	7	31
	14 Jumping off moving trains.....	3	123	1	118	.....	138	3	64
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	.....	31	.....	10	.....	9	1	8
	16 Fell from engines or cars by reason of defective handholds and sill steps.....	.....	23	1	18	.....	33	.....	1
	17 Getting on or off moving engine.....	4	135	4	149	7	130	5	53
	18 Caught in frog, guard rail, or switch.....	.....	.....	.....	.....	.....	1	.....	.....
Total.....		76	933	19	624	32	708	28	275

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties due to operating trains in which air brakes were used on only a portion of the cars.

Bulletin No. 4 has comments on collisions occurring where the trainmen had worked very long hours. In this bulletin a table is given showing the deaths and injuries due to trains parting. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling as compared with previous quarters.

Bulletin No. 7 contains a note on the cause of a rear collision due to the inadequacy of the time-interval rule.

Bulletin No. 8 explains in detail the causes of two butting collisions. In one of these collisions a conductor gave a hand signal to stop, which was taken by the engineman to mean "go ahead." In another case the men in charge of a train read "No. 2" when the order was written "*second* No. 2." This bulletin contains a special list of all the collisions of the quarter, of whatever magnitude, which were caused by mistakes in connection with time-tables or telegraphic orders.

Bulletin No. 9 records two collisions in which 44 persons were killed, one due to careless handling of a telegraphic order and the other to gross negligence of an engineman, who failed to keep the air brakes in working order. Reference is made to the derailment of four fast mail trains by reason of reckless speed.

Bulletin No. 10 records the death of 147 passengers in collisions and derailments—more than three times the average number killed during the nine preceding quarters. One derailment, due to an accidental obstruction, killed 65 passengers, and six other accidents caused 106 deaths. The causes of the derailment mentioned and of four of the worst collisions are explained at length.

Bulletin No. 11 contains a note on one butting collision which resulted in the deaths of 18 passengers and injuries to 37, the collision being caused by failure to identify a freight train on a sidetrack at night; but, aside from this, the quarter's totals are in nearly every case less than in preceding quarters. Two costly accidents were caused by air-break failures which were due to extreme cold weather. Mention is made of a fourth error like that shown in Bulletin No. 8 (readers overlooked the word "second").

Bulletin No. 12 records one derailment, killing 7 passengers, due to the failure of an engineman to reduce speed on entering a sidetrack, according to a telegraphic order which had been delivered to him. This bulletin contains summaries of the casualties, collisions, and derailments for the three years ending June 30, 1904.

Bulletin No. 13 records the death of 228 passengers in collisions and derailments—a number far greater than had been reported in any previous quarter. One derailment caused the death of 88 persons (passengers and employees); one collision, 63; another, 24; another, 18; and a fourth, 16. The circumstances of these unusually serious accidents are given in detail. One of these collisions, and another not so disastrous to life and limb, occurred under somewhat unusual circumstances, due to the complicated nature of the regulations under which the trains were run.

Bulletin No. 14 records 3 collisions, in which 48 persons were killed. The causes of these are explained. In one the men in charge of a freight train, which was sidetracked, neglected to observe signals on passing passenger trains. In another an operator recopying a telegraphic order made a mistake in writing the number of minutes. In a third an operator failed to deliver a meeting order, having acknowledged the receipt of it without first setting his signal in the stop position.



ACCIDENT BULLETIN,

No. 16.

APRIL, MAY, AND JUNE, 1905,

AND THE

YEAR ENDING JUNE 30, 1905.

**U. S. DEPARTMENT OF COMMERCE,
INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.**

**WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1905.**

ACCIDENT BULLETIN,

No. 16,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS

DURING

APRIL, MAY, AND JUNE, 1905,

WITH

TABLES FOR THE YEAR ENDING JUNE 30, 1905.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1905.

THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

Hon. FRANCIS M. COCKRELL, of Missouri.

EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING JUNE 30, 1905.

The number of persons killed in train accidents during the months of April, May, and June, 1905, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 262, and of injured 2,764. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off cars, etc., bring the total number of casualties up to 14,669 (886 killed and 13,783 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE No. 1.—*Casualties to persons—April, May, and June, 1905.*

Casualties to persons—April, May, and June, 1905.

	Passen- gers.		Trainmen.		Trainmen in yards.		Yard trainmen (switch- ing crews).		Other em- ployees.		Total em- ployees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	5	549	64	338	10	153	8	54	25	81	102	626
Derailments	36	680	70	383	6	49	8	62	10	70	94	564
Miscellaneous train accidents, including locomotive-boiler explosions .....	.....	24	10	212	5	55	3	25	7	29	25	321
Total train accidents	41	1,253	144	933	21	257	14	141	42	180	221	1,511
Coupling and uncoupling .....	.....	.....	20	226	3	182	18	341	3	17	49	766
While doing other work about trains or while attending switches .....	.....	.....	20	1,369	13	664	15	560	24	735	72	3,328
Coming in contact with over- head bridges, structures at side of track, etc. ....	.....	7	22	137	.....	73	4	67	.....	8	26	285
Falling from cars or engines or while getting on or off	31	446	60	749	29	468	41	627	22	328	152	2,172
Other causes	10	457	31	92	15	81	20	57	218	3,328	284	3,558
Total (other than train accidents)	41	910	153	2,573	65	1,468	98	1,652	267	4,416	583	10,109
Total all classes	82	2,163	297	3,506	86	1,725	112	1,793	309	4,596	804	11,620

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

In train accidents the total number of fatalities this quarter, both to passengers and to employees, is decidedly larger than in the last quarter or in this quarter a year ago. Two derailments this quarter caused the death of 34 passengers, and four collisions caused the death of 41 employees, one of the four killing 26. The particulars of these notable accidents are given in connection with the "Class A" list below.

The tables for the whole year, given on a subsequent page of this bulletin, show the unprecedented total of 350 passengers killed in train accidents, an appalling figure, for which the bulletins for the first, second, and third quarters have prepared the reader. The number of employees killed in the twelve months, while very large, is less than in the year preceding, both by train accidents (collisions and derailments) and by other causes. In coupling accidents the total number of fatalities, 243, is 35 less than in the year preceding, and the number of injuries is 331 less, a gratifying diminution, which it is to be hoped may continue. This diminution, moreover, occurs in a year when the number of men exposed to the risk of injury in this class of accident has increased materially.*

The total number of collisions and derailments was 2,766 (1,231 collisions and 1,535 derailments), of which 163 collisions and 168 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,410,671. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Num-ber.	Loss.	Persons killed.	Persons injured.
Collisions, rear	234	\$219,971	16	304
Collisions, butting	120	212,212	63	338
Collisions, trains separating	193	103,008	1	77
Collisions, miscellaneous	684	349,988	27	456
Total	1,231	885,179	107	1,175
Derailments due to defects of roadway, etc	256	173,624	8	257
Derailments due to defects of equipment	711	567,592	11	198
Derailments due to negligence of trainmen, signalmen, etc..	100	66,804	9	128
Derailments due to unforeseen obstruction of track, etc	99	378,608	42	255
Derailments due to malicious obstruction of track, etc	26	48,913	23	75
Derailments due to miscellaneous causes	343	289,951	87	331
Total	1,535	1,525,492	130	1,214
Total collisions and derailments	2,766	2,410,671	237	2,419

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

* An advance compilation, made from the reports of railroad companies, which, however, is not complete, indicates that the number of men employed by the railroads of the country on June 30, 1905, was about 9 per cent greater than on June 30, 1904.

Causes of thirty-one prominent train accidents (Class A).

[NOTE.—R. stands for rear collision; B., butting collision; M., miscellaneous collisions; D., derailment; P., passenger train; F., freight and miscellaneous trains.]

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
COLLISIONS.							
1	B	F. and F.....	1	1	\$2,233	46	Engineman forgot an order fixing a meeting point; conductor asleep. See note in text below.
2	R	F. and F.....	0	1	3,500	18	Engineman, 39 years old, in the service two years, had fallen asleep; was under influence of intoxicating liquor.
3	M	P. and F.....	0	4	3,675	51	Occurred at crossing, in fog, 4 a. m.; freight approached crossing at uncontrollable speed and ran into side of passenger train.
4	B	P. and F.....	5	4	4,350	4	Freight train ran past meeting point in consequence of engineman's watch being too slow; watch some time before had stopped and engineman had wound it without discovering that it had run down; conductor tried to stop the train but failed. These men on duty many hours. See note in text below.
5	R	F. and F.....	1	1	5,000	16	Runaway on steep grade; both of the two engines of the train held responsible for having failed to test air brakes at head of grade.
6	M	P. and F.....	3	17	5,000	52	Crossing collision; engineman of passenger train (who was killed) neglected to stop before passing over crossing, and his train was struck by a freight train.
7	B	F. and F.....	0	4	6,000	20	Train dispatcher, eighteen months' experience, gave conflicting orders to two empty engines, both of them running as extra trains.
8	B	P. and F.....	1	38	6,100	3	Engineman of passenger train continued on his way after having heard torpedoes and shut off steam; he was killed and his action is inexplicable. See note in text below.
9	R	F. and P.....	4	24	6,125	41	Passenger train, unexpectedly stopped by automatic application of air brakes, run into at rear by following freight train, which had disregarded 10-minute time interval. See note in text below.
10	B	F. and F.....	6	4	6,800	19	Conductor made mistake of 1 hour in calculating time of delayed opposing train. See note in text below.
11	B	F. and F.....	1	6	7,000	48	Dispatcher gave conflicting orders to extra freight trains.
12	B	F. and F.....	1	4	10,000	49	Conductor and engineman of west-bound train forgot about east-bound train.
13	M	F.....	1	2	11,800	24	Coal train became uncontrollable on descending grade of 3½ per cent; only 18 cars out of 40 air-braked; hose ruptured and air leaked off, but did not thereby apply brakes sufficiently to reveal the leak.
14	B	P. and P.....	2	31	16,910	42	Engineman misread telegraphic meeting order; engineman, conductor, and fireman had neglected to read order aloud, as required by rules.
15	R	P. and P.....	1	36	20,000	1	Passenger train, standing at station, run into at the rear by following passenger train, which approached at uncontrollable speed. Engineman held responsible for running too fast and flagman for not going back; also for not having given fusee signals.
16	B	P. and F.....	26	11	25,000	43	Freight train waiting on side track to be passed by four trains was started out after the passing of the third. All of the men responsible for this error were killed in the collision. See note in text below.
17	M	P. and F.....	1	11	52,400	9	Extra passenger train, in disobedience of rule, entered yard at uncontrollable speed and collided with yard train. Damage caused largely by fire from overturned stove in dining car and from explosion of gas tanks.
Total			54	199	191,893		

Causes of thirty-one prominent train accidents (Class A)—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
		DERAILMENTS.					
1	D	P	1	10	\$1,000	37	Malicious removal of rail fastenings.
2	D	F	5	0	3,475	57	Work train derailed at washout, 5 p. m. Crew had been on duty 14 hours 20 minutes.
3	D	F	0	0	6,000	26	Car of blasting powder in long freight train derailed by running in of slack when brakes were applied. See note in text below.
4	D	P	2	39	7,390	53	Track distorted by solar heat.
5	D	P	0	7	10,500	65	Cause undiscovered; speed of train 45 miles an hour.
6	D	P	19	8	12,000	59	Misplaced facing-point switch, turning train into a sidetrack; 14 passengers killed. See note in text below.
7	D	P	3	29	12,400	64	Cause undiscovered; speed 45 miles an hour on straight line; injuries to 28 passengers reported as slight.
8	D	P	2	0	13,610	15	Malicious obstruction; rock on track.
9	D	F	1	5	15,000	63	Cause undiscovered; speed 25 miles an hour.
10	D	P	0	5	15,000	14	Train broke through burning trestle bridge; speed 40 miles an hour; engineman had view of bridge for only 225 feet before reaching it.
11	D	F	1	1	25,000	62	Train of empty passenger cars running 25 miles an hour; cause undiscovered. The engine was running with the tender first.
12	D	P	0	9	28,859	33	Train broke through trestle bridge which had been weakened by heavy rains.
13	D	P	2	13	29,100	31	Some part of engine or tender or first car became detached and fell on track; wreck partly destroyed by fire.
14	D	P	23	110	200,000	27	West-bound passenger train ran into wreck of east-bound freight, in which was a carload of blasting powder; whole train destroyed by explosion or fire. See note in text below.
Total			59	236	279,334	.....
Total collisions and derailments			113	435	471,227	.....

In collision No. 1, which occurred at 5 a. m., two freight trains running toward each other collided with sufficient force to cause the damage stated and to cause the fatal scalding of one of the firemen. The collision was due to the failure of the men on the east-bound train to keep in mind a dispatcher's order to meet the west-bound train at B; and in consequence of this lapse of memory the train ran 2 miles beyond B. The meeting order was delivered to the conductor of the east-bound train at A, but it appears that he was asleep or drowsy when it was given to him. The flagman, who claims that he had awakened the conductor, was told by the latter to go to the telegraph office and get the meeting order which was waiting, and he did so, signing the conductor's name. The engineman made no objection to this improper action of the flagman. The telegraph operator was a new man and did not know that the man signing for the order was not the conductor. Returning to the caboose, the flagman did not deliver the order into the hands of the conductor, who was in the cupola, but put it under the edge of a water bucket, expecting the conductor to take it when he got down from the cupola; but the flagman claims

that he told the conductor the contents of the order—to meet the opposing train at B. The conductor claims to have no recollection of these things. On arrival at B the train was stopped by the train-order signal. The conductor alighted from the caboose, and, with the engineman, went to the telegraph office, but as the signal was displayed for some other train, and as the operator had no order for this train, he gave clearance cards and the train proceeded; the engineman having forgotten the meeting order received at A and the conductor knowing nothing about it. The flagman made no protest against passing B, assuming that the conductor and engineman had received (at B) a new order changing the meeting point to some place beyond B.

This collision occurred at 5 a. m. The conductor was a man of twelve years' experience. The flagman had had three years' experience. The engineman who forgot the order failed to show it to the fireman (who was killed), but claims that he had told him the substance of it. This engineman was making his first trip as a road engineman. He had had three and one-half years' experience as fireman and four months as engineman of a switching engine. All of these men had been on duty twelve hours after eighteen hours or more of rest.

Collision No. 4 is a case where the men at fault had been on duty irregularly for many hours. The train began its trip at A at 3 p. m. of Friday and continued its run until 3.30 a. m. of Saturday. At this point (B) a stop of seven and one-half hours was made. Starting from B at 11 a. m. Saturday the run was continued until 5.05 p. m. the same day, where there was another wait (C) until 11.30 p. m. (six hours, twenty-five minutes). The trip was resumed from C at 11.30 and continued until the collision occurred (at D) at 4.40 Sunday morning, thirty-seven hours and ten minutes from the time of starting.

Collision No. 8 occurred at 2 a. m., and was due to the inexplicable negligence of an engineman, who was killed. An eastbound freight had set off part of its cars on a sidetrack and the engine had been run back some distance for the remainder of the train. The flagman, who had been sent forward to stop the passenger train, was not seen by the engineman of the passenger, though the torpedoes which had been placed on the rail were exploded and the engineman shut off steam; but he soon again put on steam and did not shut it off until he saw the headlight of the freight train, when it was too late to avoid the collision. The fireman heard the torpedoes and noticed the slackening of speed, but presumed that the subsequent increase of speed (after the train had passed the flagman) was in response to an "all-right" signal. The engineman was one of long experience. He may have been deceived by the part of the freight train which was on the sidetrack.

In collision No. 9 a freight train ran into the rear of a stalled passenger train. Two passenger cars and a dining car were wrecked,

and the smallness of the number of passengers killed (4) is due to the fact that the conductor was able to warn most of the people on the train in time to enable them to jump off. Many of the injuries were caused by jumping off. The passenger train had passed the freight train at A, had gone on to D (6 miles), and was stopped a half mile beyond D by an unexplained defect in the air-brake apparatus, causing the brakes to apply on one of the cars. The freight train left A in from two to five minutes after the passenger train, in violation of the rule which requires an interval of ten minutes in such cases. Besides this irregularity, the engineman and fireman of the freight appear also to have become confused when they came in sight of the passenger train on a descending grade, and to have neglected to use the means at their command for reducing speed; and their train was running at 25 miles an hour when it struck the passenger train. The accident occurred in the daytime and the signal at station D, which was against the freight train, was visible for 1,100 feet before reaching it. The crew of the passenger train had succeeded, in spite of the difficulty with the air brakes, in getting their train started before the collision occurred, but not in attaining sufficient speed to materially mitigate the severity of the shock. The engineman and fireman of the freight had jumped off their engine some distance before reaching the point of collision. The conductor of the freight, who shares the responsibility for this improper running, had been in the service only six months, though he is reported as having had experience on other roads. The fireman had been in the service nine months and the engineman four years.

Collision No. 10 was caused by the conductor of the eastbound train making a mistake of one hour in calculating the time that an opposing train would be due; this opposing train was four hours forty minutes late and was so described in a dispatcher's order. The conductor counted the hours on his fingers and claims that his engineman (who was killed in the collision) had counted in the same way and had reached the same result. Another clause in the dispatcher's order would have shown the conductor his error if he had compared it carefully with the clause with which he was dealing, but he did not make any such comparison. The conductor's calculations were also somewhat confused by the presence of a passenger train on that part of the road which was one hour thirty minutes late. The fireman and one brakeman had read the order on which the miscalculation was made, but did not detect the conductor's error. The conductor reread the order after passing another station, but still failed to discover his mistake. All of the men at fault were experienced, except the brakeman, who was not familiar with the handling of train orders.

In collision No. 16 an extra freight train, south bound, drawn by two engines, running without right on the time of north-bound passen-

ger train No. 1, collided with it, causing the death of both enginemen, both firemen, the conductor, and one other man on the freight train, and the engineman, fireman, and 18 laborers (riding in or on the baggage car) on the passenger train. The men in charge of the freight train were all experienced employees. Their train had waited on a siding at A, 5 miles back, about an hour for one south-bound train and two north bound, and should have waited for one more north bound (the one with which it collided); but for some reason, which a rigid investigation failed to develop, the men in charge started their train out after the passage of the last of the other three trains. The train at fault, being a freight train, had no right to the road whatever as against the opposing passenger train.

The only surviving members of the freight-train crew, two brakemen and a learner, state that while lying at A the conductor and the two enginemen consulted their time cards very carefully and talked about train No. 1, giving evidence that they had not forgotten the train. They ate their luncheons out of buckets at the same time. Just before train No. 2 came the enginemen of one of the engines discovered a broken bolt in his engine which it was necessary to replace. While they were hunting for one to replace it No. 2 passed, and while the bolt was being put in the conductor said to one of the brakemen, "This sticks us here an hour and ten minutes," evidently figuring at that time to remain at A for No. 1. At this time the rear brakeman went for a second bucket of water, and while at the spring, which is a short distance south of the side track on which they were lying, train No. 3 passed, and the freight train started to pull out of the siding. He got back to the switch about the time the engines reached it, and, being on the fireman's side, called to him, asking him where they were going, to which the fireman replied, "To B." The brakeman said something about No. 1 not having passed, to which the fireman replied, jokingly, that his (the brakeman's) watch must be stopped. At this point the stories conflict a little, one story being to the effect that the conductor called to the front brakeman and said, "You had better get on unless you want to get left and have us come back to-morrow and get you." The brakeman, having the bucket in his hand, did not like to get on the head end of the train on account of the difficulty of carrying the bucket over the train, and he was stunned with the idea that he must be wrong about the time and the right to the road. He waited for the caboose, put the bucket of water on it, and then closed the switch. Immediately on getting into the caboose he looked up his time card, examined his watch, and found that there was no question but what they were on the time of No. 1. He states that he then thought there must be something the matter with his watch and unscrewed the back of it, but, so far as he could judge, it was running at its normal rate. It then occurred to him to go over the three rear

cars, which were not equipped with air, and set the brake on the cars immediately ahead, but, thinking that he would break the train in two, he did not do this; and he then concluded he would go to the head end and question the men there about what they were going to do for No. 1. He started to make this move, although, as he says, he "figured that the head end was a dangerous place to be on about that time," and almost at once the trains struck.

As the conductor and both enginemen and both firemen were killed, it is impossible to determine whether they forgot No. 1, whether they figured No. 1 had passed, or whether they were making a close run against No. 1. They were running their own train at a very moderate rate of speed, and the last supposition is deemed by the officers of the road improbable.

The company has a rigid watch inspection and the watches of the men were all good and had been keeping excellent time.

The men were men of good habits, and the two enginemen had been off duty thirteen hours and the conductor fifteen hours before starting on this trip, and they had been on duty less than nine hours when the accident occurred.

Derailment No. 14 was that of a passenger train running at high speed striking a freight car, which had been derailed and pushed upon the track from a train on an adjoining track, in consequence of another accident, which had occurred a few seconds before (derailment No. 3). The first derailment was that of the thirty-fifth car in a freight train of 68 cars. This train, moving at about 6 miles an hour, was signaled to stop, on account of the presence of another train on the line ahead. On sighting the stop signal the engineman applied the brakes by reducing the train-line air pressure about 5 pounds per square inch. The grade of the road was level, or very slightly descending, but the air brakes were in operation on only half of the cars of the train (34), and the pressure of the other 34 cars, not air braked and therefore not retarded, against the forward half of the train was so severe that the thirty-fifth car was derailed and, with the thirty-sixth car, was pushed to one side. It does not appear that these cars were badly crushed or their contents much broken. The engine of the passenger train, striking these cars, was wrecked, and the fire in its fire box was scattered about the wreck. This fire ignited illuminating gas escaping from ruptured tanks of the passenger cars, and the fire, either from the coals or from the gas, exploded a large quantity of blasting powder, which was in the thirty-sixth car of the freight train, and this explosion created great havoc throughout the wreck and the adjacent cars of both the passenger train and the freight. Twenty passengers, 2 trainmen, and 1 other employee were killed, and 103 passengers and 7 employees were injured. Those cars of the passenger

train which were not wrecked by the explosion were consumed by the fire, and many of the freight cars were destroyed in the same way.

It will be observed from this abstract of the railroad company's report that this distressing accident was due to the lack of power brakes on the rear half of the train. This main cause may or may not have been reenforced by excessive slack between the cars, or by putting together in the same train cars of different degrees of stiffness and strength. It is not, however, deemed important to further analyze the cause of this accident, as it is very generally agreed that the only safe rule for the management of very long freight trains, as regards this question, is to require a large percentage of the cars to be power-braked, to keep the cars in the best possible condition as regards slack in the draft gear, and to avoid putting light or weak cars in front of heavy cars in the same train.

It is to be noted that this accident to the freight train was a great danger to the passenger train, regardless of the presence or absence of explosives, and that, therefore, the foregoing statement embraces the main body of facts to be considered in connection with the accident.

In regard to explosives, it is universally recognized that their presence in large quantities in a railroad train is an imperative reason for exercising extreme care in the management of such train. The railroad company on whose line this disaster occurred and one or more other companies have now adopted regulations containing elaborate rules forbidding the transportation of explosives in large quantities except in trains of not over 30 cars, two-thirds air-braked. The explosives must be near the middle of the train and not within 10 cars of the front end, and must be in cars with steel underframes and air brakes, and which are known to be sound, by special inspection.

Derailment No. 6 was of a fast passenger train, made up of a heavy locomotive and five cars. The car next to the engine was a combination baggage and passenger (smoking) car, and it was in this car that nearly all of the fatalities occurred. The accident occurred at night, and the train appears to have run over the misplaced switch at unabated speed—about 60 miles an hour—and it was derailed in consequence of the curve of the side track being too sharp for the speed. The engine, after running off the track, ran against a building and was turned around. The first car took fire from the coals in the engine, and the passengers in this car were burned by the fire and also scalded by steam escaping from the engine. It is believed that the steam caused many of the deaths. The engineman was killed, so that the evidence concerning the signal light attached to the switch is not clear. The switch is known to have been in proper position thirty-four minutes before the accident. The fireman, who survived, said that this light and that on another switch, 175 feet away, indi-

cated white (all right), and that the engineman and himself confirmed each other in this view, on approaching the station, while some distance away, the fireman calling out "Right," and the engineman responding; but when within about 300 feet of the fatal switch the fireman was startled by a shout from the engineman, "Jump!" He at once got down behind the boiler-head and did not again see the switch light. It is not known, therefore, what had occurred to cause the engineman to give the alarm of danger; whether the light had been turned to red (stop) or had been extinguished, or whether he had seen the wrong position of the rails by the light of his headlight.

Immediately after the derailment the conductor of the train and other persons examined the switch and found it set for the side track and locked; the switch lamp was in proper position (to show red), but was not burning. It was afterwards relighted without turning up the wick. The switch had not been damaged in any way. Extended inquiries were made by the railroad company for the purpose of discovering how the switch came to be misplaced, but the report says that these inquiries have not had any useful result.

This derailment occurred opposite a station. The agent or telegraph operator in charge of the station at night is required to inspect the switch signals immediately before the time at which a fast passenger train is due. In this case, the agent says that he stepped out of his office about three minutes before the arrival of this train, saw the signal lights of the switches, and of the train order or block signal, all showing "All right;" also saw the headlight of the train approaching, 2 or 3 miles away; and then he returned to his office. A person who came into the station just as the derailment occurred testifies to having seen the agent taking his seat at his desk after turning the semaphore signal to the stop position, as is done, in the regular routine, immediately after the arrival or passage of a train.

A young man who is employed by the railroad company, though not in the operating department, had driven across the railroad at a crossing near the fatal switch about ten minutes before the accident and testifies that at that time the switch light, as well as the other switch light near by, showed white ("All right").

The station agent in question is 23 years old and had been in the service of the company eighteen months. The fireman of the train, whose testimony is referred to above, is 30 years old, and had been in the service of the company six years.

TABLE NO. 3.—Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		20		16		28		1
2	Adjusting coupler, cars accidentally started.....		10		14		20	1	1
3	Careless manipulation of uncoupling lever.....		1				1		
4	Cars not equipped with automatic coupler.....		2		8		6		
5	Coupler broken, using link and pin or chain.....		1		6		2		2
6	Coupling damaged cars.....	3	17	2	14	1	16		2
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		1		1		4		
8	Coupling with chain or other emergency appliance because of uneven track.....						2		
9	Coupling or uncoupling safety chains.....	1	2			1	3	1	1
10	Fingers or hand caught between uncoupling lever and body of car.....		46		28	1	74		4
11	Uncoupling without using lever (unnecessary).....		6		7		8		
12	Uncoupling without using lever, uncoupling lever not in working order.....		16	1	14	2	40		
13	Foot caught in frog, switch, or guard rail.....	1	5	1	2		6		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	3	9		6	1	11		
15	Opening knuckle when cars were near together, engine accidentally started.....	1	4		3		3		1
16	Opening knuckle, part of defective coupler fell on foot.....		2		3		6		1
17	Opening knuckle, lost footing.....		3				4		
18	Riding on car to uncouple, slipped off.....		1				1		
19	Struck by object at side of track.....	1	5		7		3		
20	Caught by unexpected movement of car, due to slack running in.....	3	14		19	2	27		
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	1			1	1	1		
22	Uncoupling moving cars and lost footing.....		9	1	8	1	15		
23	Parts hard to move, causing delay.....		20		9		16		
24	Went between cars unnecessarily and contrary to rule.....	2	11	2	3		14	1	1
25	Hand caught between projecting load and end of next car.....		5		6		2		1
26	No witness (fatal injury).....	4		1		8			
27	Other causes (see detailed list below).....		15		7		21		2
28	Unexplained.....		1		5		7		
	Total.....	20	226	8	182	18	341	8	17

Details of injuries included in Table 3, subclass 27.

- A. 1. Head injured by striking uncoupling lever.
- A. 2. End door of car fell off and bruised arm.
- A. 3. Arm caught while moving block which had been put between buffers to prevent cars from coupling.
- A. 4. Lifting lever; lever swung around and bruised stomach.
- A. 5. Stumbled and fell.
- A. 6. Knuckle broke at pin hole and pieces flew out.
- A. 7. Standing on front end of engine with hand resting on drawbar when engine coupled to cars.
- A. 8. Had hand on end gate; load shifted, finger lacerated.
- A. 9. Standing inside car loaded with steel billets; cars struck and load shifted, catching leg.
- A. 10. Uncoupling cars; fellow-workman pulled lever on opposite side, causing lever to strike mouth.

- A. 11. Fell by reason of failure of rod to which he was hanging.
- A. 12. Coupling engines together; holding up coupler with pinch bar.
- A. 13. Coupling on curve; drawheads passed each other.
- M. 1. Fell into culvert.
- M. 2. Uncoupling cars, struck hand against rail.
- M. 3. Uncoupling engine from car, another engine pushed cars.
- M. 4. Stepped on lump of coal.
- M. 5. Foot caught in crossing plank.
- M. 6. Struck by exploding torpedo.
- M. 7. Lump of coal fell off tender and hit head.
- M. 8. Chain too long, caused man to strike arm against car.
- M. 9. Preparing to couple engine to car; stumbled.
- M. 10. Uncoupling cars; gave lever a jerk and wrenched shoulder.
- M. 11. Riding on cars to make coupling, couplers did not couple, cars separated, man fell between cars.
- J. 1. Lump of coal fell on head.
- J. 2. Lump of coal fell on head.
- J. 3. Uncoupling coaches, hand caught in lever.
- J. 4. Apron on ballast plow car fell.
- J. 5. Uncoupling lever came up suddenly, throwing man against car.
- J. 6. Coupling engine to car, engine pilot struck heel.
- J. 7. Coupling engine to tender, drawbar slipped, hand caught between engine and tender.
- J. 8. Hanging on side of car trying to raise lever, strained shoulder and side.
- J. 9. Stepped on nail.
- J. 10. Stooping down to uncouple cars, sprained back.
- J. 11. Walking alongside cars, wheel struck foot which was on rail.
- J. 12. Coupling cars on curve, hand slipped.
- J. 13. Coupling on sharp curve, opened knuckle, fingers caught.
- J. 14. Uncoupling cars, arm caught by shifting load.
- J. 15. Uncoupling, neglected to shut air-brake cock and hose flew up.
- J. 16. Uncoupling engine from coaches, lever flew back.
- J. 17. Reaching for lever, leg caught between end sills.
- J. 18. Stepped out from between cars, struck by train.
- J. 19. Stepped on nail.
- J. 20. Stepped on piece of glass.
- J. 21. Hand caught between overhanging loads.

TABLE NO. 3A.—*Nature of injuries to employees in coupling and uncoupling cars, April, May, and June, 1905.*

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other employees.
Loss of feet.....	2		3	1
Loss of legs.....	1	2	2	
Loss of arms.....	2		2	
Loss of hands.....		1	1	
Loss of fingers.....	11	7	11	
Loss of toes.....	5	1		
Fractured skull.....				
Fractured leg.....	2		4	
Fractured arm.....	2	2		1
Fractured collar bone or ribs.....	5	3	3	1
Fractured other bones.....	1	1	6	
Contusion of head or body.....	23	26	32	4
Contusion or laceration of feet.....	24	19	30	
Contusion or laceration of toes.....	5		8	1
Contusion or laceration of legs.....	7	2	14	
Contusion or laceration of arms.....	13	11	17	
Contusion or laceration of hands.....	27	25	53	2
Contusion or laceration of fingers.....	74	65	130	5
Dislocation.....			2	
Internal injuries.....	10	4	5	1
Sprains.....	5	4	12	
Shock.....				
Miscellaneous.....	7	9	6	1
Total injuries.....	226	182	341	17
Killed.....	20	8	18	8
Total killed and injured.....	246	190	359	20

RECAPITULATION.

Killed.....	49
Injured.....	766
Total killed and injured.....	815

TABLE NO. 4.—*Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....		4		1		4		3
	2 Ice or snow.....		1						
	3 Parting of train.....		6		3		11	1	4
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	3	64	3	58	4	85	4	18
	5 While setting brakes.....	1	24	1	12	3	39		1
	Fell from—								
	6 Coal car.....	1	4		3	1	3		8
	7 Freight car other than box or coal car.....	2	5		4	1	2		2
	8 Engine or tender.....	2	59	2	26	4	16		10
	9 Passenger car.....	1	1		1				4
C7	10 Engines, tenders, or cars (all kinds) not in motion.....		43		37		15		46
	11 Miscellaneous causes.....	9	75	3	32	1	59	2	26
	12 Not clearly explained.....	29	63	12	25	15	50	8	33
	13 Slipped getting on moving trains or cars.....	6	91	2	42	4	63	7	60
	14 Jumping off moving trains.....	3	112	1	89	3	104		64
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	1	31	1	6		9		4
	16 Fell from engines or cars by reason of defective handholds and sill steps.....		23	1	18	3	34		3
	17 Getting on or off moving engine.....	2	142	8	110	2	131		42
	18 Caught in frog, guard rail, or switch.....		1		1		2		
	Total.....	60	749	29	468	41	627	22	328

YEARLY TABLES.

This bulletin completes the publication of the accident records under the law of March 3, 1901, for four years, and the following table (A) gives the aggregate for the year ending June 30, 1905, of the items which are given in Table No. 1 of the quarterly returns. The total number of casualties shown in Table A is 59,264 (3,798 killed and 55,466 injured).

This table includes the following statistics which did not appear in the quarterly bulletins, the reports from which they are taken having been received after the bulletins were printed: One passenger and 19 employees killed and 13 passengers and 39 employees injured; damage to railroad companies' property, \$6,582.

The totals of these yearly tables are not comparable with those given in the Commission's Annual Statistical Reports, for the reason that the monthly reports deal only with accidents to passengers and to employees while actually on duty. The monthly reports take no account of accidents to "other persons." These appear in the Annual Reports, and include casualties at highway crossings to trespassers and persons walking along the track, accidents to employees in shops remote from the railroad, and all other accidents not occurring to passengers and to employees actually on duty.

TABLE A.—Summary of casualties to persons, year ending June 30, 1905.

	Passengers.		Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.		Total employees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	198	3,493	259	1,922	49	804	38	366	64	526	410	3,618
Derailments	151	2,891	223	1,316	23	179	27	206	32	246	305	1,947
Miscellaneous train accidents (excluding the above), including locomotive-boiler explosions	1	114	51	972	15	295	6	129	11	91	83	1,487
Total train accidents	350	6,498	533	4,210	87	1,278	71	701	107	863	798	7,052
Coupling and uncoupling			77	864	61	702	97	1,457	8	87	243	3,110
While doing other work about trains or while attending switches			64	5,392	52	2,677	55	2,132	87	2,397	258	12,598
Coming in contact with overhead bridges, structures at side of track, etc	8	38	65	537	12	284	12	311	3	53	92	1,185
Falling from cars or engines or while getting on or off	134	1,732	269	3,367	93	2,187	162	2,527	109	1,156	633	9,237
Other causes	45	1,772	147	431	81	401	96	280	913	11,132	1,237	12,241
Total (other than train accidents) ..	187	3,542	622	10,591	299	6,251	422	6,707	1,120	14,825	2,463	38,374
Total, all classes ...	537	10,040	1,155	14,801	386	7,529	493	7,408	1,227	15,688	3,261	45,426

From Table B, next following, comparisons may be made for the four years since these records were begun. Beyond the points already mentioned, the most favorable feature of this table is the reduced number of casualties to trainmen from falling off cars, being knocked off, etc. Of these items (the two in the table next following "coupling accidents") the totals are:

Year.	Killed.	Injured.
1905.....	725	10,422
1904.....	816	10,581
1903.....	771	9,017

TABLE B.—*Casualties to passengers and employees, years ending June 30.*

	1905.		1904.		1903.		1902.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers:								
In train accidents	350	6,498	270	4,945	164	4,424	167	3,586
Other causes	187	3,542	150	3,132	157	2,549	136	2,503
Total.....	537	10,040	420	8,077	321	6,973	303	6,089
Employees:								
In train accidents	798	7,052	844	6,990	895	6,440	697	5,046
In coupling accidents....	243	3,110	278	3,441	253	2,788	143	2,113
Overhead obstructions, etc	92	1,185	116	1,210	93	992	104	1,070
Falling from cars, etc....	633	9,237	700	9,371	678	8,025	537	6,867
Other causes	1,495	24,842	1,429	22,254	1,814	20,759	1,035	18,615
Total.....	3,261	45,426	3,367	43,266	3,233	39,004	2,516	33,711
Total passengers and employees	3,798	55,466	3,787	51,343	3,554	45,977	2,819	39,800

The following two tables are self-explanatory, being consolidations of the quarterly tables giving the same classes of facts:

TABLE C.—*Collisions and derailments; damage to cars, engines, and roadway; years ending June 30.*

	1905.				1904.			
	Num- ber.	Loss.	Persons killed.	Persons injured.	Num- ber.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	1,493	\$1,463,012	152	2,085	1,736	\$1,683,020	195	1,931
Collisions, butting	707	1,451,906	304	2,453	928	1,696,425	280	2,728
Collisions, trains separat- ing.....	972	440,495	11	369	1,024	491,666	25	412
Collisions, miscellaneous.	3,052	1,493,641	141	2,204	2,748	1,319,807	130	2,012
Total.....	6,224	4,849,054	608	7,111	6,436	5,190,918	630	7,083
Derailments due to de- fects of roadway, etc...	1,007	777,433	50	1,446	866	612,538	33	716
Derailments due to de- fects of equipment.....	2,605	2,068,620	40	798	2,297	1,953,892	60	630
Derailments due to neg- ligence of trainmen, signalmen, etc.....	341	272,254	40	418	333	302,592	41	355
Derailments due to un- foreseen obstruction of track, etc	332	676,001	177	646	336	402,417	132	416
Derailments due to ma- licious obstruction of track, etc	76	142,761	34	196	110	102,717	19	196
Derailments due to mis- cellaneous causes.....	1,010	925,533	115	1,334	913	818,503	103	848
Total.....	5,371	4,862,602	456	4,838	4,855	4,192,159	388	3,161
Total collisions and derailments.....	11,595	9,711,656	1,064	11,949	11,291	9,383,077	1,018	10,244

TABLE E.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines, year ending June 30, 1905.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car	1	18	....	14	2	22	1	8
	2 Ice or snow	8	44	....	31	1	24	....	3
	3 Parting of train	2	25	1	17	1	35	1	7
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	14	266	11	204	19	306	15	62
	5 While setting brakes	10	109	8	78	10	167	4	10
	Fell from—								
	6 Coal car	8	17	1	16	2	18	1	20
	7 Freight car other than box or coal car.....	2	13	....	15	1	4	1	8
	8 Engine or tender.....	24	300	6	161	11	116	....	29
C7	9 Passenger car.....	1	18	....	5	....	4	1	13
	10 Engines, tenders, or cars (all kinds) not in motion .....	....	229	1	203	2	74	2	170
	11 Miscellaneous causes.....	21	300	6	138	10	207	9	65
	12 Not clearly explained	132	274	36	89	53	164	30	92
	13 Slipped getting on moving trains or cars.....	20	362	6	206	14	240	24	211
	14 Jumping off moving trains.....	13	535	8	389	10	477	8	242
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	5	127	2	36	....	42	2	28
	16 Fell from engines or cars by reason of defective handholds and sill steps.....	2	91	2	82	3	123	....	7
	17 Getting on or off moving engine	16	638	15	501	22	498	10	190
	18 Caught in frog, guard rail, or switch.....	....	1	....	2	1	6	....	1
	Total	269	3,867	93	2,187	162	2,527	109	1,156

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties due to operating trains in which air brakes were used on only a portion of the cars.

Bulletin No. 4 has comments on collisions occurring where the trainmen had worked very long hours. In this bulletin a table is given showing the deaths and injuries due to trains parting. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling as compared with previous quarters.

Bulletin No. 7 contains a note on the cause of a rear collision due to the inadequacy of the time-interval rule.

Bulletin No. 8 explains in detail the causes of two butting collisions. In one of these collisions a conductor gave a hand signal to stop, which was taken by the engineman to mean "go ahead." In another case the men in charge of a train read "No. 2" when the order was written "*second* No. 2." This bulletin contains a special list of all the collisions of the quarter, of whatever magnitude, which were caused by mistakes in connection with time-tables or telegraphic orders.

Bulletin No. 9 records two collisions in which 44 persons were killed, one due to careless handling of a telegraphic order and the other to gross negligence of an engineman, who failed to keep the air brakes in working order. Reference is made to the derailment of four fast mail trains by reason of reckless speed.

Bulletin No. 10 records the death of 147 passengers in collisions and derailments—more than three times the average number killed during the nine preceding quarters. One derailment, due to an accidental obstruction, killed 65 passengers, and six other accidents caused 106 deaths. The causes of the derailment mentioned and of four of the worst collisions are explained at length.

Bulletin No. 11 contains a note on one butting collision which resulted in the deaths of 18 passengers and injuries to 37, the collision being caused by failure to identify a freight train on a side track at night; but, aside from this, the quarter's totals are in nearly every case less than in preceding quarters. Two costly accidents were caused by air-brake failures which were due to extreme cold weather. Mention is made of a fourth error like that shown in Bulletin No. 8 (readers overlooked the word "second").

Bulletin No. 12 records one derailment, killing 7 passengers, due to the failure of an engineman to reduce speed on entering a side track, according to a telegraphic order which had been delivered to him. This bulletin contains summaries of the casualties, collisions, and derailments for the three years ending June 30, 1904.

Bulletin No. 13 records the death of 228 passengers in collisions and derailments—a number far greater than had been reported in any previous quarter. One derailment caused the death of 88 persons (passengers and employees); one collision, 63; another, 24; another, 18; and a fourth, 16. The circumstances of these unusually serious accidents are given in detail. One of these collisions, and another not so disastrous to life and limb, occurred under somewhat unusual circumstances, due to the complicated nature of the regulations under which the trains were run.

Bulletin No. 14 records 3 collisions, in which 48 persons were killed. The causes of these are explained. In one the men in charge of a freight train, which was sidetracked, neglected to observe signals on passing passenger trains. In another an operator recopying a telegraphic order made a mistake in writing the number of minutes. In a third an operator failed to deliver a meeting order, having acknowledged the receipt of it without first setting his signal in the stop position.

Bulletin No. 15 records a remarkable rear collision of passenger trains, causing the death of 7 persons, in which an engineman of long experience and good record disregarded two automatic block signals. Particulars are given of butting collisions of freight trains, due to complicated combinations of negligence and misconduct. In this bulletin the causes of accidents to employees in coupling and uncoupling cars are classified more in detail than in former bulletins, so as to show more clearly the circumstances under which the injuries occurred. Many cases, however, could not be classified satisfactorily. A table is given also showing the nature of the injuries to employees in coupling and uncoupling cars. Out of 790 nonfatal injuries 281 were contusions or lacerations of fingers.

ACCIDENT BULLETIN,

No. 17.

JULY, AUGUST, AND SEPTEMBER, 1905.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1906.

ACCIDENT BULLETIN,

No. 17,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND


CASUALTIES TO PERSONS

DURING

JULY, AUGUST, AND SEPTEMBER, 1905.

**INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.**

**WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1906.**



THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. JOSEPH W. FIFER, of Illinois.

Hon. FRANCIS M. COCKRELL, of Missouri.

EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE
THREE MONTHS ENDING SEPTEMBER 30, 1905.

The number of persons killed in train accidents during the months of July, August, and September, 1905, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 272, and of injured, 3,455. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 17,439 (1,053 killed and 16,386 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.^a

TABLE No. 1.—Casualties to persons, July, August, and September, 1905.
[Table continued on next page.]

	Passengers (classes a and b).		Persons carried under agree- ment or contract (class bb).		Total (a, b, and bb).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	15	952	7	97	22	1,049	83	469	12	124
Derailments	16	677	5	76	21	753	70	330	5	57
Miscellaneous train accidents, including locomotive-boiler explosions.....		24	....	6	.....	30	14	253	1	54
Total train accidents	31	1,653	12	179	43	1,832	167	1,052	18	235
Coupling or uncoupling.....							28	236	18	167
While doing other work about trains, or while attending switches.....							14	1,647	9	730
Coming in contact with overhead bridges, structures at side of track, etc		15	....	9	.....	24	16	195	6	68
Falling from cars or engines, or while get- ting on or off.....	48	571	2	20	50	591	68	975	24	544
Other causes.....	20	665	9	57	29	722	67	130	18	84
Total (other than train accidents).....	68	1,251	11	86	79	1,337	193	3,183	75	1,593
Total, all classes	99	2,904	23	265	122	3,169	360	4,235	93	1,828

NOTE.—Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

^aIn table No. 1 the passengers have been divided into two classes, and to make comparisons with the passenger casualties in former bulletins it will be necessary to take the numbers shown in the third double column of the table (of which the totals are 122 and 3,169). Passengers are classed a, b, and bb. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons (not ordinary passengers on passenger or freight trains) who are customarily carried or allowed on trains under special arrangements or privileges, such as postal clerks and express messengers; conductors, porters, and other employees on Pullman cars; employees on private or special cars; newsboys; baggage solicitors; peddlers; live-stock tenders; and men in charge of freight.

TABLE NO. 1.—*Casualties to persons, July, August, and September, 1905—Continued.*

	Yard trainmen (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	10	82	21	101	126	776	148	1,825
Derailments.....	6	58	7	46	68	491	109	1,244
Miscellaneous train accidents, including locomotive-boiler explosions.....		25		24	15	356	15	386
Total train accidents.....	16	165	28	171	229	1,623	272	3,455
Coupling or uncoupling.....	25	391	8	25	74	819	74	819
While doing other work about trains, or while attending switches.....	10	653	12	791	45	8,821	45	3,821
Coming in contact with overhead bridges, structures at side of track, etc.....	2	89	2	21	26	373	26	397
Falling from cars or engines, or while getting on or off.....	40	657	39	346	171	2,522	221	3,113
Other causes.....	28	82	273	3,763	386	4,059	415	4,781
Total (other than train accidents).....	105	1,872	329	4,946	702	11,594	781	12,931
Total, all classes.....	121	2,037	357	5,117	931	13,217	1,053	16,386

Nearly all of the totals in Table No. 1 are larger than in the three months last preceding, and some are very much larger. These figures are doubtless in large measure a reflection of the very heavy traffic done by the principal railroads of the country during the busiest summer months. The number of passengers killed in train accidents, 43, is larger than in either of the two preceding quarters, yet it is far below the disastrous quarter which included the same three months of 1904, when 228 passengers were killed in collisions and derailments. The two most notable accidents in the present report are a collision killing 12 persons and a derailment killing 15. In the table of causes given below these accidents are numbered, respectively, 5 and 10. Flagrant misconduct and negligence characterized both cases.

The total number of collisions and derailments was 3,135 (1,605 collisions and 1,530 derailments), of which 240 collisions and 141 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,540,908. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Number.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	338	\$388,873	36	476
Collisions, butting.....	225	412,956	68	709
Collisions, trains separating.....	216	91,401	4	74
Collisions, miscellaneous.....	826	391,428	40	566
Total.....	1,605	1,284,661	148	1,825

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

TABLE NO. 2.—*Collisions and derailments—Continued.*

	Number.	Loss.	Persons killed.	Persons injured.
Derailments due to defects of roadway, etc.....	284	159,058	12	408
Derailments due to defects of equipment.....	733	534,704	11	234
Derailments due to negligence of trainmen, signalmen, etc.....	115	95,395	24	170
Derailments due to unforeseen obstruction of track, etc.....	74	88,482	16	100
Derailments due to malicious obstruction of track, etc.....	20	55,026	8	43
Derailments due to malicious causes.....	304	323,582	38	289
Total.....	1,530	1,256,247	109	1,244
Total collisions and derailments.....	3,135	2,540,908	257	3,069

Following is the usual list of class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

Causes of thirty-one prominent train accidents (Class A).

[NOTE.—R. stands for rear collision; B., butting collision; M., miscellaneous collisions; D., derailment; P., passenger train; F., freight and miscellaneous trains.]

COLLISIONS.

Item.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Record No.	Cause.
1	R	F. and F.....	1	0	\$2,875	74	Failure of torpedoes to explode.
2	R	F. and F.....	3	2	2,700	30	Occurred 2 a. m. Engineman of 13 years' experience, on duty 12½ hours, ran past two automatic block signals and a flagman. This engineman was killed.
3	B	P. and F.....	1	14	3,800	79	Watch wrong; conductor and engineman failed to compare watches, as required by rule.
4	M	P. and F.....	0	4	4,350	10	Occurred 8 p. m. Switch turned under train. (See note in text below.)
5	B	P. and F.....	12	54	5,584	38	Occurred 1 a. m. West bound freight train encroached on the time of east bound passenger train. (See note in text below.)
6	B	P. and F.....	5	10	7,800	77	Pay car train encroached on time of regular passenger train. The pilot in charge of the pay car, who was the trainmaster of the division, miscalculated the time available for reaching the next station, by reason of the failure of his watch, which had stopped.
7	.....	P. and P.....	3	21	8,000	1	North bound train wrongfully ran into a cross-over track. The switch, which had been spiked and ordered kept closed, was unfastened by a track repair man. This employee, who was experienced, decamped.
8	B	P. and P.....	0	59	8,500	34	Train approached meeting station with speed not under control. Engineman had inadvertently shut off the connection to the air brake reservoir, and had neglected to test the air brakes 2 miles before reaching the station, according to rule.
9	B	P. and F.....	0	20	8,600	39	Dispatcher gave order, "No. 1 will run 2 hours late;" should have said, "second No. 1;" did not send order to all interested stations at once.
10	B	F. and F.....	1	3	11,200	82	Operator failed to deliver order to east-bound freight.
11	R	P. and P.....	6	35	12,000	69	Engineman disregarded stop signal. (See note in text below.)
12	M	F. and F.....	3	3	12,200	11	West-bound freight, switching at a way station, crossed over to the east-bound track without first flagging east-bound trains.
13	B	P. and P.....	2	83	13,200	78	Engineman misread time or was deceived by defective watch. Watch lost in wreck. Engineman being experienced and reliable, conductor did not carefully calculate time to meeting point.

Causes of thirty-one prominent train accidents (Class A)—Continued.

COLLISIONS—Continued.

Item.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Record No.	Cause.
14	B	P. and F.....	3	8	\$14,500	80	Passenger train started from station in advance of time named in wait order; freight failed to clear time of passenger 10 minutes. Passenger conductor, brakeman, and fireman left all care to engineman, who forgot order.
15	B	F. and F.....	1	6	14,923	6	Mistake in copying train order. (See note in text below.)
16	B	F. and F.....	4	3	15,000	83	Signalmen, each 6 months experience, admitted opposing freight trains into "controlled manual" block section on single track. (See note in text below.)
17	B	P. and F.....	2	13	18,000	35	Freight encroached 2 minutes on time of passenger train. Men in charge (2 years' experience) "took chances."
18	M	P. and F.....	2	25	21,200	88	Engineman of empty engine (1 a. m.) ran over misplaced switch and through crossover track; it was his duty to see that the switch was set right before passing it.
19	R	F. and P.....	3	53	21,865	71	Freight approached station on descending grade with speed not under proper control; passenger train standing at station had insufficient tail lights.
Total			52	416	205,797		

DERAILMENTS.

1	D	F.....	1	6	\$240	24	One passenger killed, 5 passengers injured. Train consisted of engine and caboose, the engine running backward. The tender was the first vehicle to jump the track.
2	D	F.....	0	39	3,000	90	Unexplained; large box car loaded with staves and heading was probably unfit to run around curve.
3	D	P.....	0	15	5,000	92	Passenger car overturned by turning of switch beneath moving train. (See note in text below.)
4	D	P.....	1	2	5,000	54	Misplaced switch; speed, 40 miles an hour. Switch was undergoing alteration and was not suitably signaled. There was no rule requiring reduction of the speed of trains running past the point where alterations were in progress.
5	D	P.....	0	4	5,300	58	Passenger train derailed by striking street car at highway crossing. Conductor of street car failed to give required flag signal (3 fatal and 7 non-fatal injuries in street car).
6	D	F.....	1	2	6,150	....	Switch maliciously misplaced.
7	D	F.....	2	2	6,450	17	Runaway on 2 per cent grade. Nonautomatic air brakes inoperative because coupling between engine and tender had accidentally parted.
8	D	F.....	1	2	11,600	22	Excessive speed.
9	D	P.....	0	18	13,300	16	Broken truck.
10	D	P.....	15	28	32,000	56	Open draw. (See note in text below.)
11	D	P.....	2	20	35,469	21	Switch maliciously misplaced; 4 a. m.
12	D	P.....	0	20	39,278	25	Unexplained. Supposed that empty baggage car was lifted by sudden application of air brakes. Track in first-class condition. Wreck burnt up by fire which started from an explosion of acetylene.
Total			23	158	162,787		
Total collisions and derailments			75	574	368,584		

Collision No. 4 appears to have been due to a combination of an inexperienced towerman and the lack of a suitable detector bar. The collision occurred at 8 p. m., and though three cars were overturned the personal injuries were slight. A passenger train, running at 40 miles an hour, was diverted by the turning of a switch while one

of the passenger cars was passing over it, with the effect that the cars ran against a locomotive on the adjoining main track. The towerman (23 years old) had been in service only nine days. The detector bar, designed to prevent the throwing of a switch while a train or car is passing over it, was only 25 feet long—not long enough to reach from the rear wheels of a front truck of a car to the leading wheels of the rear truck of the same car. This made it possible for the towerman to throw the switch after the passage of the leading truck and before the passage of the other one.

Collision No. 5, killing 12 and injuring 54 persons, nearly all of whom were passengers, occurred in the middle of the night, and one of the trains was running at nearly full speed. The men in charge of the freight train (west bound) were grossly negligent in occupying the main track on the time of the east-bound passenger train. The freight train had run a few hundred feet beyond the sidetrack at which it should have stopped and have cleared the track for the passenger train. The explanation offered by the engineman, is that he made a mistake in reading the time at L., the last station that he had passed. He says that he read "11.33" when the true time was 12.33. This man is 46 years old and had been in the service as engineman on the same road for nineteen years. The company gives him a good record. He had been on duty about thirteen hours at the time of the collision and had been off duty twenty hours and twenty-five minutes immediately preceding this trip. In the case of a man who, at midnight, has been on duty thirteen hours, the query naturally arises whether he was not asleep or dozing. This engineman denies that such was the case, and there is no evidence to contradict his assertion.

The conductor is held at fault for not having had a complete understanding with the engineman at L. as to the point at which they should meet the passenger train and for not making reasonable effort to stop his train before encroaching upon the time of the passenger. About 2 miles before reaching the point of collision this conductor left the caboose and started over the tops of the cars to go to the forward end. He had gone about two-thirds of the way over the train when it reached the point where the engineman should have shut off steam and applied the air brakes, but instead of at once stopping the train, as might have been done by applying the air brakes on any car, the conductor continued on to the engine; but by the time he had reached there it was too late to prevent the collision. The fireman and the front brakeman were also held accountable because, knowing that their train was on the time of the passenger train, they took no measures either to caution the engineman or to stop the train. The rear brakeman was also held blameworthy for not acting promptly in the emergency. The air brakes were in operation on the whole of the

train except the caboose and one platform car at the rear. By going over this platform car the brakeman could have applied the brakes.

Collision No. 11 occurred in a yard on a four-track line completely signaled, the semaphore signals being on bridges above the tracks. An accommodation train standing at the station was run into by an express train which should have passed on another main track, but which, in disregard of a stop signal, was run through a crossover track. The engineman appears to have allowed his attention to be drawn away from the signal by the movements of the accommodation train, which he was watching.

Collision No. 15, occurring at 1 a. m., was due to copying "79" instead of "59" in a dispatcher's order. The receiving operator claims that after writing "79" he repeated the figures to the dispatcher; but four other operators, listening, testify that in repeating the order he sent "59." This operator, with six months' experience as an operator and six months before that as a student, neglected to watch the wording of the same order when it was repeated, on the same wire, by the operators at other stations. He seems to have trusted to his memory, not writing down the words and figures of the message in successive order as they were transmitted.

Collision No. 16, occurring about 3 a. m. and causing the death of one engineman, one fireman, and two brakemen, was due to very irregular and improper action on the part of two block-signal men, each of about six months' experience, and the negligence of an engineman of seven years' experience. Each of the two trains had identical orders from the dispatcher to meet at B, and the collision occurred a short distance south of B (between B and C), the south-bound train having passed the meeting station without stopping. The operator at B gave to the train (wrongfully) a clear signal, and the engineman says that this action of the operator deceived him and caused him to forget the meeting order which was in his possession. The conductor and a brakeman noticed his error and endeavored to apply the air brakes, but were not able to do so in time to prevent the collision. This was a train of 33 cars, of which 25 were air braked.

The operator gave the clear signal because of some neglect, not clearly explained, in the preliminary operations which had taken place between his office and the office at C. The block-signal instruments at the two stations are connected electrically, so that either station wishing to permit a train to proceed toward the other must first communicate with the other station. The operator at C had communicated with B, and B had taken the necessary action to permit C to forward the north-bound train (which was in collision); and C asserts that eight minutes after this train had departed he received a signal from B that the north-bound train had arrived and cleared the block section, where-

upon he permitted B to give the clear signal for the south-bound train. These two block-signal stations are connected by telephone, as well as by the wires which connect the signal-indicating instruments, and the train sheets at each station, on which are recorded the times of departure of all trains, both at the station recording and at the station in the rear and the station in advance, are filled out on information conveyed over the telephone, but no communication had been made by telephone concerning the north-bound train. One of these signalmen was 19 years old and the other 21 years.

Derailment No. 3 is somewhat like collision No. 4, in that the man in charge of the switches in the signal tower was able to turn the switch while a train was passing over it, by reason of the lack of a suitable detector bar. As in the other case there was a detector bar in use but it was not long enough to provide for all conditions.

Derailment No. 10, killing 15 persons, of whom 14 were passengers, was due to the negligence of an engineman approaching an open drawbridge at a high rate of speed, so fast that the engine passed over a 24-foot opening and struck the truss of the open drawbridge on the pier at the farther side of the opening. This engineman is reported to have had a good record, and he had had five years' experience, but he had been in the service of the road where the accident occurred only seven months and had not run over this part of the line at all until the fatal trip. It is said that he "knew the line pretty well," but this knowledge, such as it was, appears to have been accidental and not the result of any definite instruction or test on the part of the railroad company. At the same time it is to be observed that the line of road approaching the bridge is perfectly straight and that the day was clear. There is a warning signal at a point one-half mile before reaching the draw and a stop signal 300 feet before reaching it, and the bridge itself, standing crosswise of the track, was in plain sight. Besides this the draw tender had displayed a red flag in the center of the track. The foreman who assigned this inexperienced engineman to this train and the conductor of the train had some conversation with the runner in regard to his knowledge of the line, but they appear to have been satisfied with a very incomplete knowledge of his qualifications.

The warning and stop signals being only fixed boards, in no way connected to the bridge, the rules require all trains to be stopped before crossing. The disregard of this rule and the fact that the engineman gives no rational explanation of his awful neglect indicate not only that he was poorly acquainted with the line, but that he must have been utterly heedless of all landmarks.

At a point about 500 feet before reaching the bridge the porter of the train applied the air brakes by the use of the conductor's valve in one of the cars in the forward part of the train, and this application

appears to have been effective, as men in the train were thrown down by the sudden checking of the speed; but the porter's action was not soon enough to overcome the momentum of the train, and two of its six cars fell into the gap at the draw.

TABLE NO. 3.—*Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		23		14	1	33		1
2	Adjusting coupler, cars accidentally started.....	1	4		4	3	16		
3	Careless manipulation of uncoupling lever.....		1		5		12		1
4	Cars not equipped with automatic coupler.....		2		2		4		
5	Coupler broken, using link and pin, or chain.....	1	5		1	1	6		1
6	Coupling damaged cars.....	1	10	4	4	2	15	1	1
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		2				3		
8	Coupling with chain or other emergency appliance because of uneven track.....						1		
9	Coupling or uncoupling safety chains.....		3		4	1	4		2
10	Fingers or hand caught between uncoupling lever and body of car.....		52		31		66		4
11	Uncoupling without using lever (unnecessary).....		12		2		4		
12	Uncoupling without using lever, uncoupling lever not in working order.....	1	24		26	1	47		2
13	Foot caught in frog, switch, or guard rail.....	1	2	1	3	4	10		1
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	3	17	3	13	1	27		3
15	Opening knuckle when cars were near together, engine accidentally started.....		2		1		2	1	
16	Opening knuckle, part of defective coupler fell on foot.....		2		6		8		
17	Opening knuckle, lost footing.....	2	4		2	1	10		
18	Riding on car to uncouple, slipped off.....	1			1	1	4		
19	Struck by object at side of track.....	1	7		4		17		
20	Caught by unexpected movement of car, due to slack running in.....	4	16	3	13	3	18		2
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....		2		3		2		
22	Uncoupling moving cars and lost footing.....	3	9	1	6	1	20		
23	Parts hard to move, causing delay.....		4		4		11		
24	Went between cars unnecessarily and contrary to rule.....	2	13		5	1	12		2
25	Hand caught between projecting load and end of next car.....		3				6		
26	No witness (fatal injury).....	7		5		3			
27	Other causes (see detailed list below).....		14	1	10	1	23	1	3
28	Unexplained.....		3		3				2
	Total.....	28	236	18	167	25	391	3	25

Details of injuries included in Table No. 3, subclass No. 27.

- J. 1. Steel billet fell from car, striking leg.
- J. 2. Stepped on engine as engine struck cars, lost balance.
- J. 3. Pulling pin, stepped on stone, turning ankle.
- J. 4. Caught foot in binding wire, turning ankle.
- J. 5. Air hose struck elbow.
- J. 6. Piece of coal fell off car, striking head.
- J. 7. Hand caught in crack on pilot of engine.
- J. 8. Loose rod struck hand.
- J. 9. Hand caught by switch.
- J. 10. Coupling engine to car, lever chain flew up.
- J. 11. Stepped on nail.
- J. 12. Head caught between car and projecting log.

- J. 13. Casting fell off car, striking hand
- J. 14. Stepped off bridge.
- J. 15. Struck head against bolt.
- J. 16. Lump of coal fell from car.
- J. 17. Holding lever to uncouple, engine moved ahead, knuckle flew out.
- A. 1. Coupling engine to car, drawbars slid by.
- A. 2. Hanging to end of car, drawbars slid by.
- A. 3. Logs rolled off car.
- A. 4. Stepped into hole or drain, bruising elbow.
- A. 5. Uncoupling lever flew up.
- A. 6. Car struck man on head.
- A. 7. Engine moved unexpectedly; hip bruised.
- A. 8. Failed to notice lever was up; caught between lever and tender of engine.
- A. 9. Thrown by jarring of car.
- A. 10. Pushing down coupling lever, stumbled and fell.
- A. 11. Hand caught by lever chain.
- A. 12. Coupling engine to car, caught between sill of tender and bumper of car.
- A. 13. Caught finger in chain.
- A. 14. Arm caught between lever and car.
- A. 15. Making coupling on curve, drawheads passed; squeezed body.
- A. 16. Coupling engine to car, drawheads passed.
- A. 17. Stepped in hole, spraining ankle.
- A. 18. Coupling engine to car on curve, drawheads passed.
- A. 19. Caught between tender and switch rope and killed.
- A. 20. Foot injured by stepping on nail.
- A. 21. Hand struck against corner of car.
- A. 22. Coupling on curve, couplers passed.
- A. 23. Lever slipped.
- A. 24. Pinched between end sills on curve.
- S. 1. Couplers passed (on curve).
- S. 2. Stepped on nail.
- S. 3. Struck stump of injured finger.
- S. 4. Opening knuckle; caught arm.
- S. 5. Attempted to pass between cars while coupling; killed.
- S. 6. Coupling engine to car; leg caught between couplers.
- S. 7. End gate on flat car fell on head.
- S. 8. Caught hand in hand hold.
- S. 9. Coupling; lever slipped back and struck finger.
- S. 10. Fell between cars; broke leg.
- S. 11. Foot caught between pilot of engine and brake beam.
- S. 12. Hit head against brake step.
- S. 13. Uncoupling cars; was removing jumpers between cars; jumper came in contact with iron shell of train line, causing short circuit, burning hand.
- S. 14. Fell, breaking collar bone.
- S. 15. Trying to drop lock in coupler; thumb mashed.
- S. 16. Foot slipped off pilot, spraining ankle.
- S. 17. Caught head between end sills (killed).
- S. 18. Reaching for lever to cut off car; ran a sliver in thumb.
- S. 19. Fell over switch, bruising leg.
- S. 20. Finger caught in groove where lock pin goes, tearing nail off.
- S. 21. Coupling engines together, leg caught between footboards of engines and bruised.
- S. 22. While reaching to lift pin, lading of car shifted, injuring leg and hip.
- S. 23. Coupling cars on curve, drawbars passed each other, catching finger.
- S. 24. Coupling cars, car struck and exploded torpedo, piece of which struck man in leg, cutting it slightly.
- S. 25. Crossing over drawbars while coupling cars, hand was caught, mashing it.

TABLE NO. 3A.—*Details of Table 1—Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other em- ployees.
Loss of feet	1	1	4	1
Loss of legs	2	1	2	.....
Loss of arms	1	1	4	.....
Loss of hands .....	.....	.....	3	.....
Loss of fingers	8	5	12	.....
Loss of toes	1	3	.....	.....
Fractured skull .....	.....	.....	1	.....
Fractured leg	3	.....	5	.....
Fractured arm	3	.....	6	1
Fractured collar bone or ribs	4	.....	8	2
Fractured, other bones	1	.....	1	.....
Contusion of head or body	21	21	50	3
Contusion or laceration of feet	26	21	45	2
Contusion or laceration of toes	8	4	8	.....
Contusion or laceration of legs	6	5	12	1
Contusion or laceration of arms	11	13	27	3
Contusion or laceration of hands	36	27	57	6
Contusion or laceration of fingers	86	52	112	4
Dislocation .....	.....	.....	1	.....
Internal injuries	9	4	10	1
Sprains	10	.....	14	1
Shock .....	.....	1	.....	.....
Miscellaneous	4	8	10	.....
Total injuries	236	167	391	25
Killed	28	18	25	3
Total killed and injured	264	185	416	28

RECAPITULATION.

Killed	74
Injured	819
Total killed and injured	893

TABLE NO. 4.—*Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Train-men.		Trainmen in yards.		Yard trainmen (switching crews).		Other em- ployees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car		5	1	1		4	.....	2
	2 Ice or snow .....		.....	.....	1	.....	.....	.....	.....
	3 Parting of train		8	1	7	.....	5	1	1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3	2	84	3	46	7	86	5	27
	5 While setting brakes	3	36	1	21	3	35	.....	1
	Fell from—								
	6 Coal car	1	7	.....	4	.....	2	1	4
	7 Freight car other than box or coal car	2	7	.....	3	1	5	1	17
	8 Engine or tender	8	77	3	49	6	17	3	14
C7	9 Passenger car .....	.....	3	.....	.....	.....	1	.....	4
	10 Engines, tenders, or cars (all kinds) not in motion .....	.....	68	1	31	.....	14	.....	50
	11 Miscellaneous causes	3	82	2	43	4	58	2	26
	12 Not clearly explained	34	61	6	40	8	48	10	18
	13 Slipped getting on moving trains or cars	4	120	4	62	3	77	5	59
	14 Jumping off moving trains	1	187	.....	82	2	117	5	76
	15 Jumping from engines or cars anticipating collision, derailment, or other accident .....	.....	37	.....	11	.....	15	.....	8
	16 Fell from engines or cars by reason of defective handholds and sill steps	1	23	.....	23	1	35	.....	.....
	17 Getting on or off moving engine	9	169	2	120	5	138	6	39
	18 Caught in frog, guard rail, or switch .....	.....	1	.....	.....	.....	.....	.....	.....
Total		68	975	24	544	40	657	39	346

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties due to operating trains in which air brakes were used on only a portion of the cars.

Bulletin No. 4 has comments on collisions occurring where the trainmen had worked very long hours. In this bulletin a table is given showing the deaths and injuries due to trains parting. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling as compared with previous quarters.

Bulletin No. 7 contains a note on the cause of a rear collision due to the inadequacy of the time-interval rule.

Bulletin No. 8 explains in detail the causes of two butting collisions. In one of these collisions a conductor gave a hand signal to stop, which was taken by the engineman to mean "go ahead." In another case the men in charge of a train read "No. 2" when the order was written "*second* No. 2." This bulletin contains a special list of all the collisions of the quarter, of whatever magnitude, which were caused by mistakes in connection with time-tables or telegraphic orders.

Bulletin No. 9 records two collisions in which 44 persons were killed, one due to careless handling of a telegraphic order and the other to gross negligence of an engineman who failed to keep the air brakes in working order. Reference is made to the derailment of four fast mail trains by reason of reckless speed.

Bulletin No. 10 records the death of 147 passengers in collisions and derailments—more than three times the average number killed during the nine preceding quarters. One derailment, due to an accidental obstruction, killed 65 passengers, and six other accidents caused 106 deaths. The causes of the derailment mentioned and of four of the worst collisions are explained at length.

Bulletin No. 11 contains a note on one butting collision which resulted in the deaths of 18 passengers and injuries to 37, the collision being caused by failure to identify a freight train on a side track at night; but, aside from this, the quarter's totals are in nearly every case less than in preceding quarters. Two costly accidents were caused by air-brake failures which were due to extreme cold weather. Mention is made of a fourth error like that shown in Bulletin No. 8 (readers overlooked the word "second").

Bulletin No. 12 records one derailment, killing 7 passengers, due to the failure of an engineman to reduce speed on entering a side track, according to a telegraphic order which had been delivered to him. This bulletin contains summaries of the casualties, collisions, and derailments for the three years ending June 30, 1904.

Bulletin No. 13 records the death of 228 passengers in collisions and derailments—a number far greater than had been reported in any previous quarter. One derailment caused the death of 88 persons (passengers and employees); one collision, 63; another, 24; another, 18; and a fourth, 16. The circumstances of these unusually serious accidents are given in detail. One of these collisions, and another not so disastrous to life and limb, occurred under somewhat unusual circumstances, due to the complicated nature of the regulations under which the trains were run.

Bulletin No. 14 records 3 collisions, in which 48 persons were killed. The causes of these are explained. In one the men in charge of a freight train, which was sidetracked, neglected to observe signals on passing passenger trains. In another an operator recopying a telegraphic order made a mistake in writing the number of minutes. In a third an operator failed to deliver a meeting order, having acknowledged the receipt of it without first setting his signal in the stop position.

Bulletin No. 15 records a remarkable rear collision of passenger trains, causing the death of 7 persons, in which an engineman of long experience and good record disregarded two automatic block signals. Particulars are given of butting collisions of freight trains, due to complicated combinations of negligence and misconduct. In this bulletin the causes of accidents to employees in coupling and uncoupling cars are classified more in detail than in former bulletins, so as to show more clearly the circumstances under which the injuries occurred. Many cases, however, could not be classified satisfactorily. A table is given also showing the nature of the injuries to employees in coupling and uncoupling cars. Out of 790 nonfatal injuries 281 were contusions or lacerations of fingers.

Bulletin No. 16 records a butting collision, killing 26 persons, and two derailments, which together caused 42 deaths. The collision was due to the unaccountable negligence of five men on a freight train, all of whom were killed. One of the derailments was due to a misplaced facing point switch (and the party responsible was not detected). The other was due to the accidental obstruction of the path of a fast passenger train by the wreck of a freight train, which had been caused by the sudden stoppage of a long train by the application of the air brakes on the front portion only. This bulletin gives the total casualties for four years. For the twelve months ending with Bulletin 16 the number of passengers killed in train accidents reached the unprecedented total of 350. The fatal coupling accidents of the year aggregated 243, as compared with 278 in the year preceding.

O

ACCIDENT BULLETIN,

No. 18.

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS

DURING

OCTOBER, NOVEMBER, AND DECEMBER, 1905.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1906.

THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. FRANCIS M. COCKRELL, of Missouri.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 18.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING DECEMBER 31, 1905.

The number of persons killed in train accidents during the months of October, November, and December, 1905, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 320 and of injured 3,797. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 18,227 (1,109 killed and 17,118 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.^a

TABLE No. 1.—Casualties to persons, October, November, and December, 1905.^{b c}

	Passen- gers.		Persons carried under agree- ment or contract.		Total (a, b, and bb).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	23	970	8	100	31	1,070	113	663	18	179
Derailments	15	529	3	70	18	599	56	356	4	60
Miscellaneous train accidents, including locomotive boiler explosions .....	.....	36	1	16	1	52	29	267	1	64
Total train accidents	38	1,535	12	186	50	1,721	198	1,286	23	303
Coupling or uncoupling .....	.....	.....	.....	.....	.....	.....	28	262	14	195
While doing other work about trains, or while attending switches .....	.....	.....	.....	.....	.....	.....	16	1,924	10	752
Coming in contact with overhead bridges, structures at side of track, etc	2	2	.....	4	2	6	17	189	9	79
Falling from cars or engines, or while get- ting on or off	24	538	1	18	25	556	76	1,201	28	626
Other causes	18	524	6	61	24	585	41	158	26	106
Total (other than train accidents)	44	1,064	7	83	51	1,147	178	3,734	85	1,758
Total all classes	82	2,599	19	269	101	2,868	376	5,020	108	2,061

^a In Table No. 1 the passengers have been divided into two classes, and to make comparisons with the passenger casualties in former years it will be necessary to take the numbers shown in the third double column of the table. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight.

^b Table No. 1 is continued on next page.

^c Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

TABLE No. 1.—*Casualties to persons, October, November, and December, 1905—Continued.*

	Yard train-men (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	5	125	19	140	155	1,107	186	2,177
Derailments	10	68	11	95	81	579	99	1,178
Miscellaneous train accidents, including locomotive boiler explosions	2	25	2	34	34	390	35	442
Total train accidents	17	218	32	269	270	2,076	320	3,797
Coupling or uncoupling	38	405	5	24	85	886	85	886
While doing other work about trains, or while attending switches	8	745	29	703	63	4,124	63	4,124
Coming in contact with overhead bridges, structures at side of track, etc	8	105	4	10	38	383	40	389
Falling from cars or engines, or while getting on or off	53	883	35	331	190	3,041	215	3,597
Other causes	39	108	256	3,368	362	3,740	386	4,325
Total (other than train accidents)	146	2,246	829	4,436	738	12,174	789	13,321
Total all classes	163	2,464	361	4,705	1,008	14,250	1,109	17,118

The total number of casualties to employees this quarter is very large; larger in nearly every item than during the last preceding quarter, and much larger than in the October-December quarter of the year before. As there was an enormous amount of traffic moving on all of the principal railroads of the country throughout the time covered by this report, it is fair to conclude that the number of men employed had been materially increased, and that therefore the proportion of employees killed or injured to the number in the service was not so much greater as would appear from a comparison of the casualties alone. On the other hand, there is evidence that many of the new men which it was necessary to employ to handle the additional business were entrusted with dangerous duties after but very little training, and that both new and old men were, in the stress of work necessitated by an enormous freight business, frequently kept on duty continuously for many hours beyond a reasonable day. Some notes are given below of accidents caused by men who had been on duty without adequate periods of rest. In view of the high standard of safety which the railroads set for themselves, and which the people and the courts justly require of the railroads, this list of instances of overwork constitutes a grave criticism of the management of the roads on which the accidents occurred; and as the instances are drawn from the reports of many roads, indicating that the faults referred to are not exceptional, it seems proper to call attention to the matter in this place.

The most disastrous accident in the present record, measuring by the number of fatal injuries, was collision No. 16, killing 17 persons, for which an engineman of limited experience was at fault. Another

collision, No. 26, killing 10 persons, was due to gross carelessness of three men, one of whom was killed. One derailment, reported as due to cause unknown, killed 13. These cases, and some of those in which accidents were caused by the negligence or misconduct of men who had worked excessive hours, are explained in detail in the paragraphs following the table of causes.

The total number of collisions and derailments was 3,722 (2,077 collisions and 1,645 derailments), of which 267 collisions and 133 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,817,294. Given more in detail, these facts appear as below:

TABLE No. 2.—Collisions and derailments.

	Number.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	538	\$513,282	60	736
Collisions, butting.....	231	447,086	74	685
Collisions, trains separating.....	294	128,973	3	98
Collisions, miscellaneous.....	1,014	463,744	49	658
Total	2,077	1,553,085	186	2,177
Derailments due to defects of roadway, etc	356	255,170	10	414
Derailments due to defects of equipment	767	530,543	11	181
Derailments due to negligence of train men, signalmen, etc	93	60,363	10	91
Derailments due to unforeseen obstruction of track, etc ...	68	92,887	17	99
Derailments due to malicious obstruction of track, etc	16	23,745	6	22
Derailments due to miscellaneous causes	345	301,501	45	371
Total	1,645	1,264,209	99	1,178
Total collisions and derailments	3,722	2,817,294	285	3,355

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE 2a.—Causes of thirty-seven prominent train accidents (Class A).

[NOTE.—R. stands for rear collision; B., butting collision; M., miscellaneous collisions; D., derailment; P., passenger train; F., freight and miscellaneous trains.]

COLLISIONS.

Item.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Record No.	Cause.
1	R	F. and P.....	0	0	300	56	2 engines coupled together "bucking" snow ran into the cars of their own train; occurred 5 a. m. Engineman, 15 years' experience, on duty 15 hours, intoxicated. Conductor suspended 10 days for continuing operations, knowing engineman's unfitness.
2	R	F. and F.....	2	2	985	74	Occurred 1 a. m. Conductor in caboose fell asleep and failed to flag; engineman of approaching train also asleep. (See note in text below.)
3	R	F. and F.....	0	2	2,000	1	Engineman and fireman both asleep. They had been on duty 27 hours, detained by landslide, but had had 4 hours' sleep in this time.

TABLE 2a.—Causes of thirty-seven prominent train accidents (Class A)—Continued.

COLLISIONS—Continued.

Item.	Class.	Kind of train.		Damage to engines, cars, and roadway.		Record No.	Cause.
4	R	P. and F.....	0 0	3,000	26	Signal operator, 2 weeks in service, gave passenger train clear block signal when block section was occupied.	
5	B	P. and F.....	2 17	3,200	34	Misplaced switch; engineman of passenger train not keeping good lookout.	
6	B	F. and P.....	1 1	3,500	10	Misplaced switch. (See note in text below.)	
7	R	F. and F.....	0 0	4,100	58	Inexperienced engineman failed to control speed of 60-car freight train (48 cars air braked). Brakemen censured by superintendent for not applying hand brakes.	
8	R	F. and F.....	0 0	4,811	57	Disregard of automatic stop signal, and also of stop signal given by flag. Engineman, 15 days' experience, on duty 14 hours, with 8 hours' intermission.	
9	B	F. and F.....	2 3	4,517	8	Failure to deliver dispatcher's order. (See note in text below.)	
10	B	F. and F.....	2 1	4,981	39	Occurred 4 a. m. Operator asleep; awoke when called by conductor; delivered 3 orders, forgetting a fourth.	
11	B	F. and F.....	1 4	5,120	40	Dispatcher gave conflicting orders to 2 passenger trains. Men in charge of one of the trains disregarded rule to get a clearance card at a preceding station.	
12	B	P. and F.....	0 23	5,500	37	Work train encroached on time of regular passenger train.	
13	R	F. and F.....	0 2	6,000	33	False clear block signal given; also engineman approached station carelessly; saw tail lights of standing train, but assumed that they were on the parallel track of another railroad. Signalman in service here 5 days; elsewhere 2 years, had long experience as telegraph operator.	
14	B	F. and F.....	0 3	8,300	42	Southbound train ran past meeting point. Northbound had run past automatic block signal set against it.	
15	M	F. and F.....	3 2	10,600	41	Approached station not under control, engineman in service 7 months.	
16	R	P. and P.....	17 36	10,700	27	Engineman of 5 months' experience ran past five warning signals. (See note in text below.)	
17	B	P. and F.....	0 3	11,102	4	Freight encroached on time of passenger train.	
18	R	F. and F.....	0 1	11,350	59	Engineman asleep, ran past automatic block signal set against him, also past a red flag. Brakeman on engine failed to keep good lookout. Crew on duty 16 hours 45 minutes, with 2 hours' intermission.	
19	B	P. and F.....	6 15	11,907	35	Freight ran beyond meeting point; engineman and fireman killed. Conductor tried, too late, to apply air brakes.	
20	B	F. and F.....	5 2	13,800	6	Westbound freight train met only one section of eastbound, schedule of second section was "overlooked," engineman and fireman killed.	
21	B	P. and P.....	3 10	14,000	62	Southbound encroached on schedule time of superior northbound train. Should have cleared 5 minutes.	
22	B	P. and F.....	4 4	20,000	36	Southbound freight encroached on time of northbound passenger train. Engineman killed; conductor asleep in caboose. (See note in text below.)	
23	B	F. and F.....	0 3	23,015	9	Mistake by dispatcher. (See note in text below.)	
24	M	F. and P.....	1 23	23,550	11	Freight train became uncontrollable on descending grade. Air brakes had been tested, but were found ineffective when applied a short distance from fouling point.	
25	B	P. and P.....	2 67	29,700	2	Dispatcher claims to have sent a meeting order which operator denies having received. No evidence to prove either statement.	
26	B	P. and F.....	10 17	32,500	66	Men in charge of freight failed to identify opposing passenger trains. (See note in text below.)	
27	R	F. and F.....	0 2	34,553	29	Freight train, 65 cars (85 percent air braked), became uncontrollable on steep grade. Brakes had worked for 5 miles on grade; engineman appears to have failed to maintain adequate supply of air.	
Total		61	243	302,591			

TABLE 2a.—Causes of thirty-seven prominent train accidents (Class A)—Continued.

DERAILMENTS.

Item.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Record No.	Cause.
1	D	F	0	0	\$2,500	82	Occurred 1 a. m.; excessive speed; conductor and engineman on duty 18 hours.
2	D	P	2	2	5,310	49	Double-head train ran past signal and off derailing switch; both enginemen killed.
3	D	P	2	24	8,000	51	Excessive speed on curve of 13 degrees 30 minutes; outer rail elevated 8 inches; speed limit, 25 miles an hour; speed of this train estimated 70 miles an hour; engineman experienced.
4	D	F	0	2	10,700	50	Stone-arch bridge undermined by heavy rain. Train had a helping engine at the rear; 14 cars fell down bank.
5	D	F	0	0	12,000	83	Lading of open car shifted and struck bridge, knocking down one span.
6	D	P	2	6	12,500	80	Spikes maliciously removed. Express car, with messenger inside, took fire and was burned up.
7	D	F	1	1	13,500	78	Accidental obstruction; car derailed by casting which had fallen from a car of preceding train.
8	D	P	13	46	14,600	....	Unexplained. (See note in text below.)
9	D	P	0	21	18,000	47	Broken rail; rail found defective inside.
10	D	P	8	81	18,000	53	Probably due to excessive speed (35 miles an hour) over a line on which there was a temporary speed limit of 18 miles an hour. Yard engine, running tender first.
Total			23	133	115,110		
Total, 27 collisions and 10 derailments			84	376	417,701		

Collision No. 16 was due to the gross negligence of an engineman of five months' experience. The accident occurred about 8 p. m. The engineman had been on duty only about an hour, and had been off duty all that day. A heavy express train, consisting of two engines and nine cars was following, at a speed of about 40 miles an hour, an accommodation train which made station stops about every mile; and it was a few seconds after the slower train had started from a station that the collision occurred. The express had been following within less than the regular time interval for several miles; and at two points within $2\frac{1}{2}$ miles of the point of collision lantern signals were shown to caution the engineman of the express; but these the engineman of the leading engine disregarded, as well as one or more fusee signals which had been thrown off by the rear brakeman of the preceding train; and the express struck the rear car of the local train with great force. The wreck took fire from the locomotive fire box and some of the passengers were burned to death. The line of road approaching the point of collision was straight for a long distance up to the station, where it curved through a cut, and it was just around this curve that the collision occurred. The explanation made by the negligent engineman is not clear, and the officers of the road appear to have been unable to get at the truth as to all of the circumstances and conditions. The engineman asserts that he was giving his

attention mainly to watching for the tail lights of the preceding train; but this, of course, affords no explanation of how he became entirely oblivious to the lantern and fusee signals. His statements about shutting off steam and applying brakes appear to be wholly unreliable. The fireman of the leading engine was killed, so that there is no evidence either to corroborate or to contradict what the engineman says.

The engineman of the second engine of this train shut off steam a mile or more before reaching the point of collision, having seen the warning signals; yet he took no measures to check what was obviously reckless conduct on the part of the leading engineman. The engineman of the leading engine had been a fireman on this division for six years and in that capacity had worked on fast trains, but he had been engineman only a few months and had been passenger engineman only one trip, and that on a local train. The fireman of the leading engine had been in the service only three months. The engineman asserts that he had had no conversation with the fireman for some minutes before the collision. A rule of the road requires firemen to so arrange their work as to be able to assist the engineman in the lookout at stations and crossings and in observing the indications of fixed signals, but it appears that both the engineman and fireman in this case paid no attention to this rule. Both the engineman and the fireman are reported as men of good character, and their records had been clear.

Collision No. 26 occurred about 3 a. m. and caused 10 deaths and 17 injuries. None of the killed were passengers. The freight train, bound westward, waiting on a side track for four east-bound passenger trains, was started out after the passage of the third train and collided with the fourth. These trains were first and second No. 20, No. 18, and No. 4. Conductor X, of the freight, says that when he left A (west bound) he knew that he could go no farther than B for the four east-bound first-class trains, and so notified not only the engineman, when he delivered him personally the orders, but the head brakeman and rear brakeman, Z, as well. Engineman Y entered the side track at the east switch at B, and as the train cleared this switch the conductor remarked to Z, "We are here for all four of them." The conductor claims that after going onto the side track he began to make out his wheel report—he having filled out his train at A—and that the rear brakeman was eating his luncheon. The conductor says that he looked out when No. 20 passed and saw the signals. He also noted second 20 when it went by, and when No. 18 went by he walked to the rear of his caboose and remarked to the rear brakeman, "That is not No. 4; No. 4 must have run around No. 18." While he was discussing the matter with the brakeman, Engineman Y gave the whistle starting signal, the head brakeman threw the west switch, and the train started to move. Both X and Z claim that they

were morally certain that all four passenger trains had gone by. The orders were perfectly clear to them and thoroughly understood, and neither of them has been able to figure out, since the accident, how the oversight occurred. Fireman H claims that when Y started to move his engine he told him that but three trains had gone. Y corrected him by saying that all four trains had gone and that there were no other trains to come. Engineman Y was killed.

Derailment No. 8 is reported as due to some cause unknown. The report says that the tender of the engine first left the track and that six cars following it were derailed. The baggage car, next to the engine, ran against the bluff on the inside of the curve, and the cars were telescoped and wrecked. The inside rail of the track was found turned over for about 90 feet. The track was in good surface and alignment and had been inspected daily. The ballast was stone. The weight of the engine was 201,500 pounds; weight on drivers, 99,500 pounds. The tender was in good condition. The speed of the train was about 35 miles an hour.

In collision No. 6 a switch had been left in wrong position by a brakeman of two weeks' experience. Extra freight train, engine 131, westbound, collided with extra freight train, engine 8, eastbound, which was standing on the passing track. When extra 8 went into the passing track, a local freight, No. 19, westbound, backed out of the east end onto the main track to proceed west. The rear brakeman of this train set the switch for the main track, and after his train had cleared it (going west on main track) he threw the switch for the passing track again and locked it. Extra 131 was about 1 mile east when No. 19 departed. In some way the lamp on the switch, which was burning when No. 19 passed over it, became extinguished, and the engineman of 131 failed to notice the absence of the light, being deceived, he says, by other lights in the vicinity. The engineman and fireman on 131 jumped off and the fireman was instantly killed. The rear brakeman of No. 19, who wrongfully threw the switch for the passing track, had been in the service two weeks, under instructions; and, moreover, had been told by both the engineman and the fireman of his train just after it had backed out of the passing track to set and lock the switch for the main track and get onto his train.

Collision No. 9, which occurred at 3 a. m., was due to the failure of an operator to deliver a meeting order. First No. 8 had orders to meet No. 7 at X, and No. 7 was to receive the order at X. The operator at that point, 19 years of age and of ten months' experience, failed to take the precaution of placing torpedoes on the rail, as required by the rules (when an order fixes a meeting at the point where the order is delivered), and he also failed to fasten the rope of the train-order signal in the "tell-tale" device. When No. 7 arrived at his station, he forgot that he held an order for that train, and

changed the semaphore signal from "stop" to "all right," and did not discover his error until after No. 7 had passed.

Collision No. 22 was between a freight train and a passenger train, both running on schedules of six months' standing. The freight, after having done considerable work at a station, was started for the next station on the time of the passenger train. The engineman and fireman were killed. The conductor had given the starting signal and then had gone to the caboose and had fallen asleep, and he was asleep at the time of the collision, though he had not worked excessive hours. It does not appear that the conductor or any of his men had had any conference with the engineman as to where the freight should meet the passenger train.

Collision No. 23 was due to an error in the dispatcher's office. The dispatcher who was on duty at 11 p. m. issued an order scheduling No. 3 west from A to F somewhat later than its regular schedule, leaving A at 1 and arriving at B at 1.25 a. m. Extra 85 east bound signed this order at F at 11.15 p. m. and left there. No. 3 was ready to leave A at 12.15 a. m., about thirty minutes earlier than the dispatcher had expected. The dispatcher who came on duty at 12 o'clock midnight revoked the special schedule and so notified No. 3 at A, overlooking the fact that extra 85 had received a copy of it at F. Extra 85 was going to B to meet No. 3, which was due there on the special schedule at 1.25. This order having been annulled to No. 3 at A, No. 3 ran earlier, and the collision occurred a half mile west of B at about 1.05 a. m. The record of the transfer of outstanding orders from one dispatcher to the other at 12 o'clock indicated very clearly that extra 85 had been given the order at F. The second dispatcher had had eighteen years' experience as dispatcher, but had been in this place only eight months. He had had a good record up to the time of accident.

Two collisions shown in Table 2 *a*, Nos. 4 and 13, were due to "failures in block working"—errors of attendants at block-signal stations. It will be noted that both of these attendants were men of brief experience. Three other collisions, Nos. 8, 14, and 18, were due to disregard of automatic block signals indicating "stop." In one of these cases the men at fault had been on duty an excessive number of hours.

In nearly or quite every accident bulletin that has been issued it has been necessary to record one or more collisions due to the mistakes or negligence of men who had been on duty so many hours as to raise the supposition, if not the presumption, that they had become drowsy, if they had not actually fallen asleep; and cases in which enginemen are definitely reported as being asleep on duty are common. In the quarter covered by the present report traffic was very heavy and in some localities, according to common report, there was difficulty in finding addi-

tional men for the freight-train service as fast as they were needed, and the reports make a very unfavorable record in this respect, culminating in a collision—No. 2 in the foregoing table of causes—in which a conductor who should have protected the rear of his train was asleep in his caboose, while the engineman of the following train was asleep in his cab, so that he would not have seen the conductor's red lantern if it had been shown. In collision No. 1 the engineman at fault had been on duty fifteen hours. In collision No. 8 an engineman, who had been in service as such only fifteen days, had been on duty fourteen hours, but with an intermission. In collision No. 18, before referred to, all of the men on the train had been on duty sixteen hours forty-five minutes, with an intermission. Collision No. 10 was due to the fault of an operator who had been asleep, though whether or not his mistake was due to this is not clear. Derailment No. 1, due to misconduct or neglect of a conductor and an engineman who had been on duty eighteen hours, may or may not have been due to overwork. Collision No. 22, referred to above, is also to be noted under this head.

In the list of boiler explosions, which do not appear in Table 2 *a*, there are also cases in which men were apparently overworked. In one such explosion the engineman, who was held at fault for allowing the water in the boiler to become too low, had been on duty very irregularly for the preceding two days. After a rest of seven hours forty minutes he was on duty twenty-one hours; then rested two hours forty-five minutes; then was on duty eleven hours five minutes, up to the time the accident occurred. The way such a "schedule" of hours works out in practice may be seen by assuming the case of a man who finishes his work at 7 o'clock on Saturday night. If, then, he rests seven hours forty minutes, he will be called at 2.40 a. m. on Sunday; working then twenty-one hours, he will be off at 11.40 p. m. on Sunday. A rest of two hours forty-five minutes then would end at 2.25 a. m. on Monday, and working then for eleven hours five minutes would bring him to 1.30 p. m. Monday.

In another case an engineman, who was dismissed from the service on account of his responsibility for the explosion, had been on duty sixteen hours forty minutes, following a rest of twenty-one hours forty minutes. This man had been in the service of the company about ten years, but had been an engineman only two months. In another boiler explosion, which caused the injury of 9 employees, and was reported as being due to the water becoming low in the boiler, the engineman held accountable had been on duty eighteen hours.

TABLE NO. 3.—Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		19		13		30		
2	Adjusting coupler, cars accidentally started.....	1	8		2	1	14		
3	Careless manipulation of uncoupling lever.....		2		6		4		
4	Cars not equipped with automatic coupler.....		1				4		
5	Coupler broken, using link and pin, or chain.....				1		5		1
6	Coupling damaged cars.....	1	14		9	8	25	1	2
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....	1	2				9		
8	Coupling with chain or other emergency appliance because of uneven track.....		1		2				1
9	Coupling or uncoupling safety chains.....		2		1		3		1
10	Fingers or hand caught between uncoupling lever and body of car.....		39		36		72		8
11	Uncoupling without using lever (unnecessary).....	1	9		4	2	9		1
12	Uncoupling without using lever, uncoupling lever not in working order.....	2	18	2	87	4	44		1
13	Foot caught in frog, switch, or guard rail.....	3	6	1	1	4	6	1	
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	2	29	1	22	4	36		2
15	Opening knuckle when cars were near together, engine accidentally started.....		3		1	1	5		
16	Opening knuckle, part of defective coupler fell on foot.....		4		3		10		
17	Opening knuckle, lost footing.....	4	7		7	2	11		
18	Riding on car to uncouple, slipped off.....	2			1		8		
19	Struck by object at side of track.....		4		3	3	9		1
20	Caught by unexpected movement of car, due to slack running in.....	1	24	2	12		26		1
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	3		2	2		9		
22	Uncoupling moving cars and lost footing.....		16	1	8	4	18	1	1
23	Parts hard to move, causing delay.....		7		6		9		1
24	Went between cars unnecessarily and contrary to rule.....	2	13	1	2	1	6	1	
25	Hand caught between projecting load and end of next car.....		4		3		6		
26	No witness (fatal injury).....	2		4		2		1	
27	Other causes (see detailed list below).....	2	20		13	1	26		1
28	Unexplained.....	1	3		1	1	1		
	Total.....	28	262	14	195	38	405	5	24

Details of injuries included in table No. 3, subclass No. 27.

- O. 1. Standing on car, reaching down for lever, sprained back.
- O. 2. Cutting off engine, foot slightly bruised.
- O. 3. Uncoupling from platform, caught hand between vestibules.
- O. 4. Caught hand between deadwood and tank.
- O. 5. Coupling engine to passenger train, had to raise buffer by hand; hand mashed.
- O. 6. Struck thigh against end of car.
- O. 7. Struck by piece of exploding torpedo.
- O. 8. Killed; lever caught in trousers and threw man down on rail.
- O. 9. Making coupling between weed-burner and caboose; couplers passed, squeezing man between cars.
- O. 10. Hand slipped in using lever at side of car.
- O. 11. Lumps of coal fell on head.
- O. 12. Adjusting couplers on curve; caught between tender and coach.
- O. 13. Adjusting worn coupler, finger crushed.
- O. 14. Caught leg, bruising it.
- O. 15. Grasped brake; brake released, twisting arm.
- O. 16. Ties fell off car, bruising head and face.
- O. 17. Lump of coal fell on head.

- O. 18. Uncoupling two engines, hand struck by the release rod.
O. 19. Coupling engines together, caught hand.
O. 20. Cutting off car, wrist injured by rupture of air hose.
O. 21. Killed; uncoupling caboose, hand hold gave way; man fell under train.
O. 22. Lever struck man in side.
O. 23. Cutting off car; fell off and sprained wrist.
O. 24. Fingers mashed; carelessness.
O. 25. Slabs fell off car and struck hands.
N. 1. Placed hand back of couplers; hand lacerated.
N. 2. Couplers slipped.
N. 3. Struck in side by lever.
N. 4. Coupling to engine; coupler was too low.
N. 5. Hand caught between lift-rod and car.
N. 6. Piece of coupler broke off and struck man on head.
N. 7. Coupling on curve, drawbars passed; man squeezed between engine and car.
N. 8. Opening knuckle; steel sliver penetrated hand.
N. 9. Killed; engine, after being uncoupled, backed.
N. 10. Knuckle flew up and struck man on elbow.
N. 11. Lump of coal fell off car.
N. 12. Coupling on curve; drawbars passed.
N. 13. Door of car fell on foot.
N. 14. Caught between end sills.
N. 15. Between cars to adjust couplers; couplers passed and man was squeezed.
N. 16. Cutting off cars; sudden application of air threw man off car.
N. 17. Lift-rod struck man in chest.
N. 18. Finger ring caught in coupler chain and pulled man under engine.
N. 19. Coupling engine to empty ladles; finger caught.
D. 1. Uncoupling cars on curve; caught head between buffers.
D. 2. Torpedo exploded, cutting leg.
D. 3. Lumber shifted, catching fingers.
D. 4. Mitten caught, catching finger.
D. 5. Coupling on curve; caught between end sills.
D. 6. Pinched finger in chain.
D. 7. Caught between car bodies on short curve.
D. 8. Head caught between end sills while cutting off cars.
D. 9. Knuckle broke and flew against leg.
D. 10. Trying to adjust coupler on inside short curve; leg bruised.
D. 11. Uncoupling cars; stepped on nail.
D. 12. Mitten froze to coupler; finger crushed.
D. 13. Sprained wrist in pulling lever up.
D. 14. Lifting lever, glove caught, throwing man down.
D. 15. Foot caught between pilot and angle cock.
D. 16. Board from roof fell off, striking man on hand.
D. 17. Couplers passed, catching man between sills.
D. 18. Heel of rubber caught on spike; wheel ran over foot.

TABLE NO. 3A.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other employees.
Loss of feet.....	2	.....	5	.....
Loss of legs.....	1	.....	1	.....
Loss of arms.....	1	.....	4	1
Loss of hands.....	3	1	1	.....
Loss of fingers.....	7	1	9	1
Loss of toes.....	.....	.....	1	.....
Fractured skull.....	.....	.....	1	.....
Fractured leg.....	1	1	4	1
Fractured arm.....	6	3	.....	.....
Fractured collar bone or ribs.....	5	6	12	2
Fractured other bones.....	1	2	8	.....
Contusion of head or body.....	27	22	46	2
Contusion or laceration of feet.....	27	19	31	2
Contusion or laceration of toes.....	6	2	8	.....
Contusion or laceration of legs.....	5	6	24	.....
Contusion or laceration of arms.....	16	9	21	1
Contusion or laceration of hands.....	35	40	48	2
Contusion or laceration of fingers.....	87	69	142	9
Dislocation.....	1	1	.....	.....
Internal injuries.....	12	5	23	1

TABLE NO. 3A.—Injuries in coupling and uncoupling cars—Continued.

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other employees.
Sprains.....	9	3	15	.....
Shock.....	1	.....	1	.....
Miscellaneous.....	9	5	5	2
Total injuries.....	262	195	405	24
Killed.....	28	14	88	5
Total killed and injured.....	290	209	443	29

RECAPITULATION,

Killed.....	85
Injured.....	88
Total killed and injured.....	97

TABLE NO. 4.—Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	1	7	.....	3	.....	6	.....	1
	2 Ice or snow.....	.....	11	.....	6	.....	5	.....	1
	3 Parting of train.....	.....	11	.....	5	1	8	.....	1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	5	84	1	56	7	127	2	19
	5 While setting brakes.....	4	42	.....	26	2	61	.....	4
	Fell from—								
	6 Coal car.....	1	7	1	3	.....	4	1	4
	7 Freight car other than box or coal car.....	.....	1	.....	1	.....	2	.....	6
	8 Engine or tender.....	11	113	.....	56	10	40	2	15
	9 Passenger car.....	.....	1	.....	1	.....	1	.....	4
C7	10 Engines, tenders, or cars (all kinds) not in motion.....	.....	86	.....	59	.....	18	1	47
	11 Miscellaneous causes.....	4	90	1	52	5	69	1	16
	12 Not clearly explained.....	45	62	14	7	16	35	6	12
	13 Slipped getting on moving trains or cars.....	6	134	3	61	2	86	6	67
	14 Jumping off moving trains.....	3	228	1	102	2	193	8	70
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	.....	41	.....	13	.....	14	.....	6
	16 Fell from engines or cars by reason of defective handholds and sill steps.....	.....	37	.....	18	.....	43	.....	1
	17 Getting on or off moving engine.....	6	245	4	155	8	168	8	57
	18 Caught in frog, guard rail, or switch.....	.....	1	1	2	.....	3	.....	.....
	Total.....	76	1,201	26	626	53	883	35	331

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction shall be punished by a fine of

not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

Sec. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

Sec. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties due to operating trains in which air brakes were used on only a portion of the cars.

Bulletin No. 4 has comments on collisions occurring where the trainmen had worked very long hours. In this bulletin a table is given showing the deaths and injuries due to trains parting. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling as compared with previous quarters.

Bulletin No. 7 contains a note on the cause of a rear collision due to the inadequacy of the time-interval rule.

Bulletin No. 8 explains in detail the causes of two butting collisions. In one of these collisions a conductor gave a hand signal to stop, which was taken by the engine-man to mean "go ahead." In another case the men in charge of a train read "No. 2" when the order was written "*second* No. 2." This bulletin contains a special list of all the collisions of the quarter, of whatever magnitude, which were caused by mistakes in connection with time-tables or telegraphic orders.

Bulletin No. 9 records two collisions in which 44 persons were killed, one due to careless handling of a telegraphic order and the other to gross negligence of an engineman who failed to keep the air brakes in working order. Reference is made to the derailment of four fast mail trains by reason of reckless speed.

Bulletin No. 10 records the death of 147 passengers in collisions and derailments—more than three times the average number killed during the nine preceding quarters. One derailment, due to an accidental obstruction, killed 65 passengers, and six other accidents caused 106 deaths. The causes of the derailment mentioned and of four of the worst collisions are explained at length.

Bulletin No. 11 contains a note on one butting collision which resulted in the deaths of 18 passengers and injuries to 37, the collision being caused by failure to iden-

TABLE NO. 3.—*Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		19	.....	13	.....	30	.....	1
2	Adjusting coupler, cars accidentally started.....	1	8	.....	2	1	14	.....	1
3	Careless manipulation of uncoupling lever.....		2	.....	5	.....	4	.....
4	Cars not equipped with automatic coupler.....		1	.....		.....	4	.....
5	Coupler broken, using link and pin, or chain.....		7	.....	1	.....	5	.....	1
6	Coupling damaged cars.....	1	14	.....	9	8	25	1	2
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....	1	2	.....		.....	9	.....
8	Coupling with chain or other emergency appliance because of uneven track.....		1	.....	2	.....		.....	1
9	Coupling or uncoupling safety chains.....		2	.....	1	.....	3	.....	1
10	Fingers or hand caught between uncoupling lever and body of car.....		39	.....	36	.....	72	.....	8
11	Uncoupling without using lever (unnecessary).....	1	9	.....	4	2	9	.....	1
12	Uncoupling without using lever, uncoupling lever not in working order.....	2	18	2	37	4	44	.....	1
13	Foot caught in frog, switch, or guard rail.....	3	6	1	1	4	6	1	.....
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	2	29	1	22	4	36	.....	2
15	Opening knuckle when cars were near together, engine accidentally started.....		3	.....	1	1	5	.....
16	Opening knuckle, part of defective coupler fell on foot.....		4	.....	3	.....	10	.....
17	Opening knuckle, lost footing.....	4	7	.....	7	2	11	.....
18	Riding on car to uncouple, slipped off.....	2		.....	1	.....	8	.....
19	Struck by object at side of track.....		4	.....	3	3	9	.....	1
20	Caught by unexpected movement of car, due to slack running in.....	1	24	2	12	.....	26	.....	1
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	3		2	2	.....	9	.....
22	Uncoupling moving cars and lost footing.....		16	1	8	4	18	1	1
23	Parts hard to move, causing delay.....		7	.....	6	.....	9	.....	1
24	Went between cars unnecessarily and contrary to rule.....	2	13	1	2	1	6	1	.....
25	Hand caught between projecting load and end of next car.....		4	.....	3	.....	6	.....
26	No witness (fatal injury).....	2		4	.....	2	.....	1	.....
27	Other causes (see detailed list below).....	2	20	.....	13	1	26	.....	1
28	Unexplained.....	1	3	.....	1	1	1	.....
	Total.....	28	262	14	195	38	405	5	24

Details of injuries included in table No. 3, subclass No. 27.

- O. 1. Standing on car, reaching down for lever, sprained back.
- O. 2. Cutting off engine, foot slightly bruised.
- O. 3. Uncoupling from platform, caught hand between vestibules.
- O. 4. Caught hand between deadwood and tank.
- O. 5. Coupling engine to passenger train, had to raise buffer by hand; hand mashed.
- O. 6. Struck thigh against end of car.
- O. 7. Struck by piece of exploding torpedo.
- O. 8. Killed; lever caught in trousers and threw man down on rail.
- O. 9. Making coupling between weed-burner and caboose; couplers passed, squeezing man between cars.
- O. 10. Hand slipped in using lever at side of car.
- O. 11. Lumps of coal fell on head.
- O. 12. Adjusting couplers on curve; caught between tender and coach.
- O. 13. Adjusting worn coupler, finger crushed.
- O. 14. Caught leg, bruising it.
- O. 15. Grasped brake; brake released, twisting arm.
- O. 16. Ties fell off car, bruising head and face.
- O. 17. Lump of coal fell on head.

- O. 18. Uncoupling two engines, hand struck by the release rod.
O. 19. Coupling engines together, caught hand.
O. 20. Cutting off car, wrist injured by rupture of air hose.
O. 21. Killed; uncoupling caboose, hand hold gave way; man fell under train.
O. 22. Lever struck man in side.
O. 23. Cutting off car; fell off and sprained wrist.
O. 24. Fingers mashed; carelessness.
O. 25. Slabs fell off car and struck hands.
N. 1. Placed hand back of couplers; hand lacerated.
N. 2. Couplers slipped.
N. 3. Struck in side by lever.
N. 4. Coupling to engine; coupler was too low.
N. 5. Hand caught between lift-rod and car.
N. 6. Piece of coupler broke off and struck man on head.
N. 7. Coupling on curve, drawbars passed; man squeezed between engine and car.
N. 8. Opening knuckle; steel sliver penetrated hand.
N. 9. Killed; engine, after being uncoupled, backed.
N. 10. Knuckle flew up and struck man on elbow.
N. 11. Lump of coal fell off car.
N. 12. Coupling on curve; drawbars passed.
N. 13. Door of car fell on foot.
N. 14. Caught between end sills.
N. 15. Between cars to adjust couplers; couplers passed and man was squeezed.
N. 16. Cutting off cars; sudden application of air threw man off car.
N. 17. Lift-rod struck man in chest.
N. 18. Finger ring caught in coupler chain and pulled man under engine.
N. 19. Coupling engine to empty ladles; finger caught.
D. 1. Uncoupling cars on curve; caught head between buffers.
D. 2. Torpedo exploded, cutting leg.
D. 3. Lumber shifted, catching fingers.
D. 4. Mitten caught, catching finger.
D. 5. Coupling on curve; caught between end sills.
D. 6. Pinched finger in chain.
D. 7. Caught between car bodies on short curve.
D. 8. Head caught between end sills while cutting off cars.
D. 9. Knuckle broke and flew against leg.
D. 10. Trying to adjust coupler on inside short curve; leg bruised.
D. 11. Uncoupling cars; stepped on nail.
D. 12. Mitten froze to coupler; finger crushed.
D. 13. Sprained wrist in pulling lever up.
D. 14. Lifting lever, glove caught, throwing man down.
D. 15. Foot caught between pilot and angle cock.
D. 16. Board from roof fell off, striking man on hand.
D. 17. Couplers passed, catching man between sills.
D. 18. Heel of rubber caught on spike; wheel ran over foot.

TABLE NO. 3A.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other employees.
Loss of feet.....	2	.....	5	.....
Loss of legs	1	.....	1	.....
Loss of arms	1	.....	4	1
Loss of hands	3	1	1	.....
Loss of fingers	7	1	9	1
Loss of toes .....	.....	.....	1	.....
Fractured skull .....	.....	.....	1	.....
Fractured leg.....	1	1	4	1
Fractured arm	6	3	.....	.....
Fractured collar bone or ribs.....	5	6	12	2
Fractured other bones	1	2	3	.....
Contusion of head or body.....	27	22	46	2
Contusion or laceration of feet	27	19	31	2
Contusion or laceration of toes	6	2	8	.....
Contusion or laceration of legs	5	6	24	.....
Contusion or laceration of arms	16	9	21	1
Contusion or laceration of hands	35	40	48	2
Contusion or laceration of fingers	87	69	142	9
Dislocation	1	1	.....	.....
Internal injuries.....	12	5	23	1

TABLE NO. 3A.—*Injuries in coupling and uncoupling cars—Continued.*

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other employees.
Sprains.....	9	8	15	.....
Shock.....	1	.....	1	.....
Miscellaneous.....	9	5	5	2
Total injuries.....	262	195	405	24
Killed.....	28	14	38	5
Total killed and injured.....	290	209	443	29

RECAPITULATION,

Killed.....	85
Injured.....	886

Total killed and injured..... 971

TABLE NO. 4.—*Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	1	7	.....	3	.....	6	.....	1
	2 Ice or snow.....	.....	11	.....	6	.....	5	.....	1
	3 Parting of train.....	.....	11	.....	5	1	8	.....	1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	5	84	1	56	7	127	2	19
	5 While setting brakes.....	4	42	.....	26	2	61	.....	4
	Fell from—								
	6 Coal car.....	1	7	1	3	.....	4	1	4
	7 Freight car other than box or coal car.....	.....	1	.....	1	.....	2	.....	6
	8 Engine or tender.....	11	113	.....	56	10	40	2	15
	9 Passenger car.....	.....	1	.....	1	.....	1	.....	4
C7	10 Engines, tenders, or cars (all kinds) not in motion.....	.....	86	.....	59	.....	18	1	47
	11 Miscellaneous causes.....	4	90	1	52	5	69	1	16
	12 Not clearly explained.....	45	62	14	7	16	35	6	12
	13 Slipped getting on moving trains or cars.....	6	134	3	61	2	86	6	67
	14 Jumping off moving trains.....	3	228	1	102	2	193	8	70
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	.....	41	.....	13	.....	14	.....	6
	16 Fell from engines or cars by reason of defective handholds and sill steps.....	.....	37	.....	18	.....	43	.....	1
	17 Getting on or off moving engine.....	6	245	4	155	8	168	8	57
	18 Caught in frog, guard rail, or switch.....	.....	1	1	2	.....	3	.....	.....
	Total.....	76	1,201	26	626	53	883	35	331

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of

not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

Sec. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

Sec. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 1 contains brief notes on the causes of coupler accidents, explanatory of Table No. 3. Table No. 4 is supplemented by similar notes. In this quarter special mention was made of 130 casualties due to operating trains in which air brakes were used on only a portion of the cars.

Bulletin No. 4 has comments on collisions occurring where the trainmen had worked very long hours. In this bulletin a table is given showing the deaths and injuries due to trains parting. The table shows that nearly all of the coupler failures which resulted in a collision or derailment were reported as due to "cause unknown."

Bulletin No. 5 contains a table showing the cause (as reported) of each coupling accident in the quarter. The table fills 12 pages.

Bulletin No. 6 contains a table giving notes on the causes of the 16 rear collisions which occurred in this quarter on railroads where the block system is in use. Comment is made on the large increase in the number of accidents to men in coupling as compared with previous quarters.

Bulletin No. 7 contains a note on the cause of a rear collision due to the inadequacy of the time-interval rule.

Bulletin No. 8 explains in detail the causes of two butting collisions. In one of these collisions a conductor gave a hand signal to stop, which was taken by the engineman to mean "go ahead." In another case the men in charge of a train read "No. 2" when the order was written "*second* No. 2." This bulletin contains a special list of all the collisions of the quarter, of whatever magnitude, which were caused by mistakes in connection with time-tables or telegraphic orders.

Bulletin No. 9 records two collisions in which 44 persons were killed, one due to careless handling of a telegraphic order and the other to gross negligence of an engineman who failed to keep the air brakes in working order. Reference is made to the derailment of four fast mail trains by reason of reckless speed.

Bulletin No. 10 records the death of 147 passengers in collisions and derailments—more than three times the average number killed during the nine preceding quarters. One derailment, due to an accidental obstruction, killed 65 passengers, and six other accidents caused 106 deaths. The causes of the derailment mentioned and of four of the worst collisions are explained at length.

Bulletin No. 11 contains a note on one butting collision which resulted in the deaths of 18 passengers and injuries to 37, the collision being caused by failure to iden-

tify a freight train on a side track at night; but, aside from this, the quarter's totals are in nearly every case less than in preceding quarters. Two costly accidents were caused by air-brake failures which were due to extreme cold weather. Mention is made of a fourth error like that shown in Bulletin No. 8 (readers overlooked the word "second").

Bulletin No. 12 records one derailment, killing 7 passengers, due to the failure of an engineman to reduce speed on entering a side track, according to a telegraphic order which had been delivered to him. This bulletin contains summaries of the casualties, collisions, and derailments for the three years ending June 30, 1904.

Bulletin No. 13 records the death of 228 passengers in collisions and derailments—a number far greater than had been reported in any previous quarter. One derailment caused the death of 88 persons (passengers and employees); one collision, 63; another, 24; another, 18; and a fourth, 16. The circumstances of these unusually serious accidents are given in detail. One of these collisions, and another not so disastrous to life and limb, occurred under somewhat unusual circumstances, due to the complicated nature of the regulations under which the trains were run.

Bulletin No. 14 records three collisions, in which 48 persons were killed. The causes of these are explained. In one the men in charge of a freight train, which was sidetracked, neglected to observe signals on passing passenger trains. In another an operator recopying a telegraphic order made a mistake in writing the number of minutes. In a third an operator failed to deliver a meeting order, having acknowledged the receipt of it without first setting his signal in the stop position.

Bulletin No. 15 records a remarkable rear collision of passenger trains, causing the death of 7 persons, in which an engineman of long experience and good record disregarded two automatic block signals. Particulars are given of butting collisions of freight trains, due to complicated combinations of negligence and misconduct. In this bulletin the causes of accidents to employees in coupling and uncoupling cars are classified more in detail than in former bulletins, so as to show more clearly the circumstances under which the injuries occurred. Many cases, however, could not be classified satisfactorily. A table is given also showing the nature of the injuries to employees in coupling and uncoupling cars. Out of 790 nonfatal injuries, 281 were contusions or lacerations of fingers.

Bulletin No. 16 records a butting collision, killing 26 persons, and two derailments, which together caused 42 deaths. The collision was due to the unaccountable negligence of five men on a freight train, all of whom were killed. One of the derailments was due to a misplaced facing point switch (and the party responsible was not detected). The other was due to the accidental obstruction of the path of a fast passenger train by the wreck of a freight train, which had been caused by the sudden stoppage of a long train by the application of the air brakes on the front portion only. This bulletin gives the total casualties for four years. For the twelve months ending with Bulletin 16 the number of passengers killed in train accidents reached the unprecedented total of 350. The fatal coupling accidents of the year aggregated 243, as compared with 278 in the year preceding.

Bulletin No. 17 records one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals, and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches and a collision which was due to failure of "controlled manual" block signal working.

ACCIDENT BULLETIN,

No. 19.

JANUARY, FEBRUARY, AND MARCH, 1906.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1906.

ACCIDENT BULLETIN,

No. 19,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS

DURING

JANUARY, FEBRUARY, AND MARCH, 1906.

U. S. , INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1906.

THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. FRANCIS M. COCKRELL, of Missouri.

Hon. FRANKLIN K. LANE, of California.

EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING MARCH 31, 1906.

The number of persons killed in train accidents during the months of January, February, and March, 1906, as shown in reports made by the railroad companies to the Interstate Commerce Commission under the "accident law" of March 3, 1901, was 274, and of injured 3,969. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 1,126 killed and 17,170 injured. These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.^a

TABLE No. 1.—Summary of casualties to persons, January, February, March, 1906. *b c*

	Passen- gers (a and b).		Persons carried under agree- ment or con- tract (b b).		Total (a, b, and b b).		Trainmen.		Train- men in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	46	939	10	108	56	1,047	85	755	12	216
Derailments.....	2	628	3	118	5	746	41	365	5	53
Miscellaneous train accidents, including loco- motive-boiler explosions.....		10	1	5	1	15	7	301	3	48
Total train accidents.....	48	1,577	14	231	62	1,808	133	1,421	20	317
Coupling or uncoupling.....							24	287	19	173
While doing other work about trains or while attending switches.....							28	1,968	13	726
Coming in contact with overhead bridges, structures at side of track, etc.....	1	3	1	1	2	4	19	167	9	72
Falling from cars or engines or while getting on or off.....	31	396	1	11	32	407	86	1,275	28	580
Other causes.....	16	400	2	48	18	448	47	180	32	13
Total (other than train accidents).....	48	799	4	60	52	859	204	3,877	101	1,681
Total all classes.....	96	2,376	18	291	114	2,667	337	5,298	121	1,998

^a In table No. 1 the passengers have been divided into three classes, and to make comparisons with the passenger casualties in former years it will be necessary to take the numbers shown in the third double column of the table. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, news-boys, live-stock tenders, and men in charge of freight.

^b Table No. 1 is continued on next page.

^c Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

TABLE NO. 1.—*Summary of casualties to persons, January, February, March, 1906—Continued.*

	Yard trainmen (switching crews).		Other employees.		Total employees.		Total all persons.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	22	121	8	105	127	1,197	183	2,244
Derailments.....	4	60	20	86	70	554	75	1,310
Miscellaneous train accidents, including locomotive-boiler explosions.....	5	30	.....	21	15	400	16	415
Total train accidents.....	31	211	28	212	212	2,161	274	3,969
Coupling or uncoupling.....	38	494	3	29	84	983	84	983
While doing othes work about trains or while attending switches.....	21	728	25	694	87	4,116	87	4,116
Coming in contact with overhead bridges, structures at side of track, etc.....	4	118	1	11	33	368	35	372
Falling from cars or engines or while getting on or off.....	46	886	27	348	187	3,089	219	3,406
Other causes.....	35	100	295	3,376	409	3,786	427	4,234
Total (other than train accidents).....	144	2,326	351	4,458	800	12,342	852	13,201
Total all classes.....	175	2,537	379	4,670	1,012	14,503	1,126	17,170

The number of casualties reported as occurring in the quarter under review is large. As in Bulletin 18, the increases over the totals for the corresponding quarter of the preceding year are nearly all very large. Many of the present totals are smaller than those in the corresponding columns three months ago, but this is a comparison that affords scant ground for congratulation, because the changes are not large enough to indicate a tendency. The only sure conclusion that can be reached from these statistical comparisons, in whatever aspect they are taken, is that the Government should investigate the disastrous collisions, derailments, and other accidents on which they are based, and set forth in unmistakable terms their causes and remedies.

The worst accident in the present quarter's record, collision No. 29, Table 2a, causing 34 deaths and 24 injuries, was due to a striking failure of the train-dispatching system. A telegraph operator at a small and lonely station who had been on duty all day and more than half the night fell asleep, and, on awakening, misinformed the train dispatcher as to what had occurred while he had slept. On some railroads the train-dispatching rules require that the telegraph operator's train-order signal shall always be set to indicate "stop" except when, on the approach of a train, the operator, by pulling a lever or a cord, changes it to the "proceed" position. This rule is designed to insure that no train shall pass a station except when the operator at that station is awake and attentive to duty. This rule was not in force at this place. It is sometimes advocated that the superior train—the one which by the order is to have its right to the track bridged—must receive the order and acknowledge its receipt in writing before the order is delivered to the opposing or inferior train.

Neither of these ideas finds universal acceptance, however; and, in view of the differences of opinion among railroad officers on the points involved, and on other details of train dispatching, it is pertinent to observe that the block system, repeatedly advocated by the Commission, is the true means that ought to be adopted for the prevention of such distressing disasters as that here recorded.

The details of this and certain other notable accidents are given below. The report of collision No. 8 includes an example of flagrantly excessive working hours.

The total number of collisions and derailments was 3,490 (1,921 collisions and 1,569 derailments), of which 289 collisions and 167 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,924,785. Given more in detail, these facts appear as below:

TABLE No. 2.—*Collisions and derailments.*

	Number.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	504	\$492,741	42	675
Collisions, butting.....	240	515,330	92	819
Collisions, trains separating.....	223	77,325	2	106
Collisions, miscellaneous.....	954	432,147	47	644
Total.....	1,921	1,517,543	183	2,244
Derailments due to defects of roadway, etc.....	356	267,477	7	465
Derailments due to defects of equipment.....	647	579,478	11	235
Derailments due to negligence of trainmen, signalmen, etc..	96	59,161	6	81
Derailments due to unforeseen obstruction of track, etc....	96	192,738	29	179
Derailments due to malicious obstruction of track, etc.....	12	8,486	1	12
Derailments due to miscellaneous causes.....	362	299,902	21	338
Total.....	1,569	1,407,242	75	1,310
Total collisions and derailments.....	3,490	2,924,785	258	3,554

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE 2a.—Causes of forty-six prominent train accidents (Class A)

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions, D, derailment, P, passenger train, F, freight and miscellaneous trains.]

COLLISIONS

					Damage to en- gines, cars, and roadway.	Reference to record.	Cause.
1	B	P. and F....	1	30	\$2,200	8	Freight stalled in snow; terrible wind and storm. Flags and torpedoes failed to attract attention of engineman of passenger train.
2	B	F. and F....	3	6	2,695	71	Conductor of train running north on southbound track failed to arrange for protection, flagman mismanaged when conductor was absent, engine-man failed to test air brakes; block-signal operator gave false clear signal.
3	R	P. and F.....	0	0	2,700	20	Milk train disregarded block signal, engineman discharged, conductor of standing freight train discharged for not flagging, fireman suspended for failing to observe fixed-signal indication.
4	B	P. and F.....	0	11	3,000	10	Men in charge of passenger train failed to correctly identify freight standing on sidetrack; occurred in daylight.
5	B	P. and F....	1	0	3,200	67	Occurred in blizzard 4 a. m.; telegraphic communication being interrupted, trainmaster gave orders by telephone. (See note in text below.)
6	B	F. and F.....	1	0	3,635	13	Operator accepted meeting order after the train addressed had passed his station. Occurred 5 a. m.
7	R	F. and F.....	0	6	4,400	50	Engineman asleep, other members of crew neglected to notice that he approached station too fast, all these men on duty 15½ hours.
7a	B	P. and P.....	0	40	4,832	61	Engineman overlooked or confused orders. (See note in text below.)
7b	R	P. and F.....	0	40	5,000	1	Block-signal man went off duty without giving proper information to his successor.
8	R	F. and F.....	0	3	5,440	31	Runaway on steep grade; engineman and fireman asleep. Both on duty long hours. (See note in text below.)
9	B	F. and F....	2	3	5,600	12	Dispatcher, 18 months' experience, on duty five hours, gave meeting order first to inferior train and forgot to hold the superior.
10	R	F. and F....	0	0	6,000	32	Excessive speed under permissive signaling.
11	M	P. and P....	1	12	6,245	41	Train of empty passenger cars in yard disregarded stop signal, crossing collision, one passenger in smoking car killed.
12	B	F. and D....	0	2	7,442	14	Mistake in identifying extra train standing on side-track.
13	R	P. and P....	5	4	9,400	28	Runaway train, engineman and fireman driven from cab by steam from burst injector pipe; brakeman opened conductor's valve, but too late.
14	R	F. and F....	0	2	9,900	57	Standing train not protected, approaching train not under control, wreck led to derailment No. 15. (See below.)
15	B	F. and F....	1	3	10,002	72	Conductor and engineman eastbound receiving order to meet westbound No. 35 proceeded to execute it with such exclusive attention that they forgot an order previously received to meet No. 71.
16	M	F. and F....	1	0	11,000	100	Runaway on descending grade, train consisted of 25 cars air-braked and 9 not air-braked, with two engines.
17	B	P. and P....	3	20	12,191	34	Northbound train running 15 minutes late by dispatcher's order failed to wait three minutes at meeting station, as per rule.
18	B	P. and P....	1	18	13,000	35	Conductor and engineman southbound, reading register, failed to note that opposing northbound train had carried green signals.
19	B	P. and F....	3	20	14,000	9	Engineman of empty engine forgot schedule of passenger train.
20	B	P. and F....	3	12	14,000	37	Conductor and engineman of freight neglected to identify passenger train at meeting point.

TABLE 2a.—Causes of forty-six prominent train accidents (Class A)—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
21	R	F. and P.....	5	5	15,000	29	Runaway freight cars; had been left standing on grade with only air brakes to hold them; men in charge of train on duty 15½ hours.
22	M	P. and F.....	1	7	16,789	43	Cars of freight train left standing on siding (1 a. m.) while engine was switching, ran out on main track and met passenger train.
23	R	F. and F.....	0	0	17,000	3	Air brakes ineffective; angle cock had not been opened behind third car.
24	B	P. and P.....	2	36	17,789	30	Runner of empty engine miscalculated time and place to meet opposing passenger train.
25	B	P. and F.....	4	18	18,000	6	Signalman gave false clear block sign: 1. (See note in text below.)
26	B	P. and P.....	1	39	19,630	62	Agent and operator failed to deliver order to east-bound train; operator, 27 years old, 2 months' experience, went off duty without informing agent that there were orders to deliver to 2 trains; agent delivered to only 1 train.
27	B	P. and P.....	3	8	20,000	5	Eastbound train ran past meeting point; engine-man forgot order; conductor, taking up tickets, discovered engineman's error, but not soon enough.
28	B	F. and F.....	3	3	27,000	70	Engineman westbound forgot about one of two east-bound trains he was to meet; conductor and two brakeman slept while waiting at meeting point and assumed engineman had waited for two trains.
29	B	P. and P.....	34	24	51,249	63	Operator, 2 a. m., on duty 19 hours; accepted order after train had passed. (See note in text below.)
Total collisions.			79	396	358,599		

DERAILMENTS.

1	D	P.....	1	2	\$2,000	19	Movable-point frog out of place, rod having been broken. Signalman held blameworthy for not having discovered the fault by the lightening of the load on the lever.
2	D	P.....	0	0	2,100	25	Switch maliciously misplaced; speed of train 65 miles an hour, yet no injuries reported.
3	B	F.....	0	0	2,300	24	Broken wheel, due to sticking of brake, caused by defect in triple valve.
4	D	P.....	0	40	2,500	96	Unexplained; speed 35 miles an hour; 3 cars overturned.
5	D	F.....	10	17	2,500	92	Work train carrying laborers derailed at culvert washed out by flood. Water in creek was raised suddenly by melting of snow; ice gorge filled opening beneath track, and water then found its way to culvert 1,000 feet east of bridge.
6	D	F.....	1	1	3,732	82	Worn tires on driving wheels of engine, combined with slight overelevation of stock rail of switch.
7	D	P.....	1	28	6,512	93	Switch loosened by mail bag thrown off from car, breaking switch stand.
8	D	P.....	0	25	9,917	74	Rails spread. Track in "fair" condition; curve 6°; superelevation, 6 inches; weight of engine, 87½ tons; speed, 45 miles an hour.
9	D	P.....	0	10	10,725	91	Washout caused by river changing its course after a rain storm; engineman was not properly observing slow order.
10	D	P.....	0	48	11,735	76	Broken rail; internal defect.
11	D	P.....	0	5	13,500	47	Unexplained.
12	D	P.....	3	5	16,600	89	Washout.
13	D	F.....	0	5	17,500	49	Runaway on 3½ percent descending grade; train of 52 cars was started from summit too rapidly. Engineman's experience, 4 years as fireman and 2 months as engineman.
14	D	P.....	2	2	18,800	88	Occurred 11 a. m.; burned bridge.
15	D	P.....	2	20	42,700	87	Accidental obstruction; westbound track obstructed by wreck due to rear collision a moment before on eastbound track. (See collision No. 14.)
Total derailments ..			20	208	163,121		
Total collisions and derailments.			99	604	521,720		

Collision No. 29, causing the death of 31 passengers and a money loss (besides the damages paid on account of deaths and personal injuries) of over \$50,000, was due to the nondelivery of a meeting order sent by the train dispatcher. The collision occurred about 2 a. m., and a blinding snowstorm prevailed at the time. Immediately after the collision the wreck took fire, and eight cars—passenger, mail, and baggage—were burned up. A portion of the deaths were caused by the fire. The westbound train ran past the meeting point which had been fixed by the dispatcher, for the reason, as before stated, that the meeting order was not delivered. The westbound train, running from A to G, had been ordered to meet the eastbound at E, but it was found that the eastbound train was gaining time over the westbound, and it was decided to change the meeting point to D, and an order to this effect was sent to the eastbound train at F and to the westbound at C. The nondelivery of the order was due to the fact that the telegraph operator at C accepted it from the dispatcher after the train had passed. The dispatcher, depending on the station operators for knowledge as to the whereabouts of all trains, inquired of the operator at C if the westbound train (No. 3) had passed. The operator replied that it had not, and the dispatcher at once instructed him to display his stop signal. But it turned out that the train had passed while the operator had been asleep, and the information given by him to the dispatcher after he awoke was, therefore, false. This operator had been on duty all day the day before, and then served at night in place of the regular night operator—nineteen hours in all, except for the time occupied at meals. It is estimated that he had been asleep only about one minute. He had worked an excessive length of time to accommodate his fellow-operator and without the permission or knowledge of his superintendent. He had been in service at C one week, for this company two months, and for other companies nearly two years. He is reported as being proficient and habitually attentive to duty.

Collision No. 6 was due to practically the same cause as No. 29.

Collision No. 5, occurring at 4 a. m. in a severe blizzard, was due to a mistake in conveying orders over a telephone line. Communication with the dispatcher's office had been cut off, and the trainmaster, a dispatcher of twenty-five years' experience, telephoned to the engineman of the superior (passenger) train to stop at H for orders, but the engineman did not so understand the message and proceeded beyond the point where the orders were to be delivered and where he was to have met the opposing train. The train master asserts that he got a response "all right," spoken twice; but he did not cause his order to be written down by the engineman, nor did he have it repeated or delivered to the conductor of the train. Having got his worthless

"all right" from the engineman, he sent the order in regular form to the inferior train.

Collision No. 7a appears to have been due to a confusion of dispatcher's orders on the part of an engineman, and is notable as illustrating the failure of a safeguard which has come into use within recent years, the safeguard of requiring the conductor of a train to notify the engineman on approaching a meeting point. In the present case this notification was given, but did not produce the intended result. Eastbound trains ordinarily have the right of track over westbound; but in this case the westbound passenger train had been made superior to eastbound trains for about 58 miles. At D, within this district, the westbound train received orders to wait at C until 9.15 p. m. The eastbound train therefore had right of track to C until that hour, or until such time as it should be able to reach the side track C and get out of the way of the westbound train; but there was also a westbound freight train waiting at C, and the eastbound train had orders to wait at C until 9.05 p. m. for this freight.

The eastbound train came on at 9.10 p. m., and having fulfilled the order as regards the freight train had no other train to look out for except the westbound passenger. The westbound passenger was at a standstill about 600 feet east of the west switch, and with this standing train the eastbound train collided. It would appear that the engineman of the eastbound forgot entirely about the westbound passenger train or mistakenly calculated that he was to meet it at another station farther east. He asserted that the air-brake pipe had been closed back of the second car of his train, and that this was the cause of his approaching the station at high speed, but the officers of the road reject this explanation. The station next east of C was the usual meeting point for the two passenger trains. The conductor of No. 2, on approaching C, gave the proper signal by air whistle to remind the engineman that C was a meeting point; but it is believed that the engineman took this as applying to his order to wait for the freight. He acknowledged the conductor's signal, but did not make the reduction of speed which it required. The signal given by the conductor conveyed no information as to what or how many trains were to be met at that station and therefore did not provide for the contingency of an engineman's forgetfulness as to how many trains he was to look out for at a given point. This engineman had been in the service twenty years.

In collision No. 7b forty passengers were injured, most of them not very seriously, by a combination of neglects, failures, and unfavorable circumstances. The train was a special, occupied by a company of firemen being taken home after extinguishing a fire. The train (two cars) was being pushed from a side track to the main track, when it

was struck by a through freight train. The conductor of the special had instructed a block signalman to protect this switching movement, but the signalman went off duty without informing the man who relieved him, and this man allowed the through freight train to proceed. The conductor of the passenger train threw a lever to put in the stop position a semaphore signal connected with the switch at which he was at work; but this signal did not move to the stop position, for the reason, it is said, that a wire controlling it had been lengthened by the heat from the fire, which had been raging near by. The conductor and the engineman of the special passenger train, as well as the signalman, were dismissed, as it was their duty under the rules to send back a flagman, notwithstanding the arrangement with the block signalman.

Collision No. 8 was due to a freight train running uncontrolled on a steep grade in consequence of both the engineman and the fireman falling asleep. This fireman had been in the service only one month, but the engineman had had long experience. Both of these men had worked very unreasonably long hours. Taking the engineman's record from the third day before the collision, his periods on and off duty were as follows: Off 13 hours, on 14½ hours; off 4½ hours, on 14 hours; off 4½ hours, on 22 hours; off 4 hours and on 10½ hours at the time of the collision. It is to be observed that this is the record as shown on the call books. The short periods off duty could not be availed of entirely for sleep. The report says that after the 22-hour tour of work the engineman requested that he be called for a certain train, this for the purpose of reaching his home sooner (and he was thus called), and that he could have been relieved by another engineman if he had made a request to that effect.

Collision No. 17 was due to a misunderstanding or neglect concerning the time at which a southbound train should clear the track for a northbound. The northbound train, due at B at 3.54 p. m., was authorized to run fifteen minutes late, or to leave B at 4.09. The southbound train, due at B at 4.04, was behind time, but the conductor and engineman were aiming to reach the station at 4.09. These men assert that the collision, which occurred at a point about 1,000 feet north of the station, happened at about 4.08, and though the evidence is conflicting the preponderance is in favor of this statement. The northbound train, however, should have waited at the station, if necessary, until 4.12, as, according to a regular rule, a stop of three minutes should have been made, if necessary, to allow for a possible error on the part of the men in charge of the southbound train. This three-minute rule applied not only at schedule meeting stations, but to meeting stations made by train dispatchers' special orders.

Collision No. 25 was due to the gross negligence of a block signalman, an engineman, and a conductor, and the contributory negligence

of several other employees. The collision was between eastbound passenger train No. 2 and westbound freight train No. 7, both running at full speed. The wreck took fire and three cars were burned up. These trains had both been ordered by the train dispatcher to meet at B, but No. 2 passed B, and the collision occurred between B and A. No. 7 was allowed to proceed from A to B by reason of the negligence of the signalman at A, who set his signal in the "proceed" position and subsequently fell asleep. The eastbound train passed B because the block signal at that station was cleared for it, no information having been received from A concerning train No. 7, and because both the engineman and the conductor of train No. 2 carelessly assumed that train No. 9, standing on the side track at that station, was No. 7, the one which they were to meet. The engineman of the eastbound train was killed.

The conductor evidently took no pains to identify the train on the side track. The signal for eastbound trains at B was in the proceed position, because no communication had been received from the block-signal operator at A, and because the meeting order for the trains had not been sent to B. The signalman at A was employed as brakeman five years ago; he lost an arm three years ago and was then employed as signalman. Communication from station to station was by telephone. The report says that this signalman had been on duty eleven hours, after a suitable period of rest. Although this signalman was primarily at fault for permitting the westbound train to pass A, the engineman of that train is also blameworthy, for under the rule he should not have accepted a clear signal unless he saw the signal moved from the stop to the clear position. This rule he disregarded and accepted an all-right signal which had been set at "all right" by the signalman some time before.

TABLE No. 3.—*Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		24		11		27		2
2	Adjusting coupler, cars accidentally started.....	1	8		5		15		1
3	Careless manipulation of uncoupling lever.....		2		1		3		
4	Cars not equipped with automatic coupler.....	1	1		1		1		
5	Coupler broken, using link and pin or chain.....	1	4				9		1
6	Coupling damaged cars.....	3	12	1	8	3	30	1	2
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		2		1		19		
8	Coupling with chain or other emergency appliance because of uneven track.....		1						
9	Coupling or uncoupling safety chains.....		3			1	4		
10	Fingers or hand caught between uncoupling lever and body of car.....		64		24		98		5
11	Uncoupling without using lever (unnecessary).....	1	4		1		8		2
12	Uncoupling without using lever, lever not in working order.....		30		33	1	64		1
13	Foot caught in frog, switch, or guard rail.....	1	3	2	6	5	3		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	2	34	4	16	3	48		4
15	Opening knuckle when cars were near together, engine accidentally started.....		6		2		12		
16	Opening knuckle, part of defective coupler fell on foot.....		5		1		6		1
17	Opening knuckle, lost footing.....	6	6		4	2	5		
18	Riding on car to uncouple, slipped off.....		1		3	1	2		
19	Struck by object at side of track.....		1		4	1	8		
20	Caught by unexpected movement of car, due to slack running in.....	2	19	3	12	3	32		2
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....		3		3		2	1	2
22	Uncoupling moving cars and lost footing.....	2	14	4	7	5	34		1
23	Parts hard to move, causing delay.....		7		12	2	15	1	
24	Went between cars unnecessarily and contrary to rule.....		10	1	2	4	8		
25	Hand caught between projecting load and end of next car.....		4	1	3	1	11		
26	No witness (fatal injury).....	4		3		5			
27	Other causes (see detailed list below).....		17		11		26		5
28	Unexplained.....		2		2	1	4		
	Total.....	24	287	19	173	38	494	3	29

Details of injuries included in Table No. 3, subclass No. 27.

- J. 1. Trying to adjust coupler.
- J. 2. Coupling engine to car, caught head between air hose and air pipe.
- J. 3. Coupling engine to way car, hand caught.
- J. 4. Foot caught between coupler and deadwood.
- J. 5. Fingers caught between couplers.
- J. 6. Foot caught in crossing plank.
- J. 7. Raising lock-pin lever with shoulder, collar bone split.
- J. 8. Drawheads passed, ends of fingers mashed.
- J. 9. Uncoupling coach, strained back lifting on lever.
- J. 10. Jammed between end sills of cars on curve.
- J. 11. Uncoupling engine from train.
- J. 12. Hand slipped off grab iron, fell.
- J. 13. Piece of drawbar flew off.
- J. 14. Air hose struck face.
- J. 15. Bumped head against car.
- J. 16. Hand caught between drawheads.
- J. 17. Drawheads passed, leg caught.
- J. 18. Stepped on slab, slipped.
- F. 1. Adjusting drawheads, mashed finger.
- F. 2. Couplings slipped by, caught between car bodies.

- F. 3. Uncoupling engine, steam hose struck hand.
 F. 4. Foot caught under brake beam.
 F. 5. Coupling engine to car, slipped and fell into ash pit.
 F. 6. Coupling engine to car, caught foot under pilot.
 F. 7. Turned ankle on rail.
 F. 8. Stepped out from between cars into a hole in bridge.
 F. 9. Leaning forward to reach lever, strained arm.
 F. 10. Slipped and fell.
 F. 11. Stepping out from between cars, stumbled over pile of coal.
 F. 12. Letting down drawhead, caught hand under drawhead.
 F. 13. Uncoupling engine from train, caught between stock chute and tender.
 F. 14. Sudden lurch of cars caused fall.
 F. 15. Attempted to close knuckle to prevent cars coupling, finger lacerated.
 F. 16. Lump of coal fell from tank and struck thigh.
 F. 17. Lift lever flew up.
 F. 18. Drawheads passed, caught between engine and car.
 F. 19. Coat caught in handle of lever.
 F. 20. Caught between cars on curve.
 F. 21. Stepped on pebble.
 M. 1. Thrown down by shock when cars came together.
 M. 2. Drawheads passed, body squeezed.
 M. 3. Pole fell on foot.
 M. 4. Holding to brake wheel; brakes were applied, twisting hand.
 M. 5. Glove caught on coupler, hand mashed.
 M. 6. Piece of coal fell off car on foot.
 M. 7. Hand carelessly resting on drawhead, mashed.
 M. 8. Hot metal splashed out of car on foot.
 M. 9. Struck leg against footboard of engine.
 M. 10. Coupling engine to flat car loaded with lumber; load shifted, catching hand.
 M. 11. Cars jolted; lost balance, fell.
 M. 12. Stepped on rail, foot crushed.
 M. 13. Standing on footboard of engine, foot caught.
 M. 14. Standing on footboard of engine, foot caught between pilot and footboard.
 M. 15. Stepped on stone, spraining ankle.
 M. 16. Stepped on nail.
 M. 17. Piece of drawhead broke off, struck face.
 M. 18. Lever fell on hand.
 M. 19. Apron fell and struck head.
 M. 20. When cars came together load shifted, bruising body.

TABLE NO. 3A.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Train- men.	Train- men in yards.	Yard train- men.	Other em- ployees.
Loss of feet.....	4	1	4	
Loss of legs.....		4	1	
Loss of arms.....	3	1	3	
Loss of hands.....	3	1	2	
Loss of fingers.....	11	5	12	
Loss of toes.....		1	1	
Fractured skull.....				
Fractured leg.....	4	1		
Fractured arm.....	6	3	9	2
Fractured collar bone or ribs.....	3	1	13	
Fractured other bones.....	2	1	6	
Contusion of head or body.....	17	15	45	2
Contusion or laceration of feet.....	29	15	41	3
Contusion or laceration of toes.....	5	3	7	1
Contusion or laceration of legs.....	8	7	13	1
Contusion or laceration of arms.....	20	8	29	1
Contusion or laceration of hands.....	34	29	61	7
Contusion or laceration of fingers.....	104	52	166	8
Dislocation.....	1	1		
Internal injuries.....	16	17	38	2
Sprains.....	8	3	32	1
Shock.....				
Miscellaneous.....	9	4	11	1
Total injuries.....	287	173	494	29
Killed.....	24	19	38	3
Total killed and injured.....	311	192	532	32

RECAPITULATION.

Total killed.....	84
Total injured.....	983
Total killed and injured.....	1,067

TABLE NO. 4.—*Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....		9		4		3		1
	2 Ice or snow.....		26	1	14	1	20	1	2
	3 Parting of train.....	1	7		3		7	1	
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	5	73		50	5	82	3	17
	5 While setting brakes.....	3	42		16	6	54		4
	Fell from—								
	6 Coal car.....	1	7		1	1	7		6
	7 Freight car other than box or coal car.....	1	5		2		4	1	4
	8 Engine or tender.....	9	109	2	44	7	38		17
	9 Passenger car.....	2	2		2				3
C7	10 Engines, tenders, or cars (all kinds) not in motion.....	1	125		45		20		37
	11 Miscellaneous causes.....	6	111	2	36	3	93	4	29
	12 Not clearly explained.....	43	57	19	25	11	40	4	17
	13 Slipped getting on moving trains or cars.....	5	124		54	3	72	6	55
	14 Jumping off moving trains.....	2	222		122	3	191	5	91
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	1	43		5		20		4
	16 Fell from engines or cars by reason of defective handholds and sill steps.....	1	38		14		30		1
	17 Getting on or off moving engine.....	5	274	4	143	6	201	2	58
	18 Caught in frog, guard rail, or switch.....		1				4		2
	Total.....	86	1,275	28	580	46	886	27	348

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 17 records one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring at 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals, and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches and a collision which was due to failure of "controlled manual" block signal working.

Bulletin No. 18 shows total casualties much larger than in the preceding quarters, due largely no doubt to an enormous increase in traffic. Many accidents are reported in which the men had been on duty excessively long hours. One collision, killing 17 persons, was due to the error of an engineman of five months' experience, who ran past five warning signals. Another collision, killing 10 persons, was due to the failure of the men in charge of a freight train to identify opposing passenger trains. One derailment of a passenger train, killing 13 persons, was reported as due to some cause that could not be discovered.

^a For notes on Bulletins 1 to 16, inclusive, see Bulletin No. 17 or No. 18.

UNIVERSITY OF MICHIGAN
JUN 12 1906

ACCIDENT BULLETIN,

No. 20.

APRIL, MAY, AND JUNE, 1906,

AND THE

YEAR ENDING JUNE 30, 1906.


U. S. INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1906.

ACCIDENT BULLETIN,
No. 20,
SHOWING COLLISIONS AND DERAILMENTS OF TRAINS
AND
CASUALTIES TO PERSONS
DURING
APRIL, MAY, AND JUNE, 1906,
WITH
TABLES FOR THE YEAR ENDING JUNE 30, 1906.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1906.



THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. FRANCIS M. COCKRELL, of Missouri.

Hon. FRANKLIN K. LANE, of California.

Hon. EDGAR E. CLARK, of Iowa.

Hon. JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN NO. 20.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING JUNE 30, 1906.

The number of persons killed in train accidents during the months of April, May, and June, 1906, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 194, and of injured 3,031. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off cars, etc., bring the total number of casualties up to 16,937 (933 killed and 16,004 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.^a

TABLE NO. 1.—*Casualties to persons—April, May, and June, 1906.*^{b c}

	Passengers (a and b).		Persons car- ried under agreement, etc. (bb).		Total (a, b, and bb).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	5	735	6	104	11	839	50	458	11	150
Derailments	15	507	1	51	16	558	52	329	3	39
Miscellaneous train accidents, includ- ing locomotive boiler explosions		16	.....	4	.....	20	11	215	.....	49
Total train accidents	20	1,258	7	159	27	1,417	113	1,002	14	238
Coupling or uncoupling							21	274	14	159
While doing other work about trains or while attending switches							17	1,761	9	663
Coming in contact with overhead bridges, structures at side of track, etc	4	10	.....	2	4	12	28	201	3	61
Falling from cars or engines or while getting on or off	87	456	.....	16	87	472	65	982	20	502
Other causes	12	528	1	49	13	577	41	121	17	74
Total (other than train acci- dents)	53	994	1	67	54	1,061	172	3,339	63	1,459
Total all classes	73	2,252	8	226	81	2,478	285	4,841	77	1,697

^a In Table No. 1 the passengers have been divided into three classes, and to make comparisons with the passenger casualties in former years it will be necessary to take the numbers shown in the third double column of the table. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight.

^b Table No. 1 is continued on next page.

^c Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

TABLE No. 1.—*Casualties to persons—April, May, and June, 1906—Continued.*

	Yard trainmen (switching crews).		Other em- ployees.		Total em- ployees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	6	101	9	117	76	826	87	1,665
Derailments	7	46	11	62	73	476	89	1,034
Miscellaneous train accidents, includ- ing locomotive boiler explosions ...	3	23	4	25	18	312	18	332
Total train accidents	16	170	24	204	167	1,614	194	3,031
Coupling or uncoupling	29	356	4	24	68	813	68	813
While doing other work about trains, or while attending switches.....	16	609	30	757	72	3,790	72	3,790
Coming in contact with overhead bridges, structures at side of track, etc	2	90	2	20	35	372	39	384
Falling from cars or engines or while getting on or off	36	730	43	384	164	2,598	201	3,070
Other causes	17	73	271	4,071	346	4,339	359	4,916
Total (other than train acci- dents)	100	1,858	350	5,256	685	11,912	739	12,973
Total all classes.....	116	2,028	374	5,460	852	13,526	983	16,004

The total number of persons recorded in this bulletin as killed (933) is less than in the last preceding quarter, but it is more than in the corresponding quarter of 1905. The same is true of the numbers of employees killed in coupling accidents. In considering train accidents alone, however, there is a gratifying diminution both in passengers killed and employees killed, compared with either of the two earlier quarters mentioned. These comparisons, tabulated, are:

	1906, Buletin 20, April, May, June	1906, Buletin 19, January, February, March.	1906, Buletin 16, April, May, June.
1. Passengers killed in train accidents.....	27	62	41
2. Employees killed in train accidents.....	167	212	221
3. Employees killed, coupling.....	68	84	49
4. Total passengers and employees killed.....	933	1,124	886

In the first of these items the totals have been swelled by great disasters in nearly every quarter for two years. In Bulletin 16 there are two well remembered derailments, killing 34 passengers, and in Bulletin 19 one collision, killing 34 passengers and employees. In the present bulletin this feature is not so bad, yet there is one disastrous butting collision of passenger trains that killed 10 passengers and employees, and one derailment killing 9 passengers.

The total number of collisions and derailments was 3,103 (1,588 collisions and 1,515 derailments), of which 173 collisions and 153 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,373,924. Given more in detail, these facts appear as follows:

TABLE No. 2.—*Collisions and derailments.*

	Number.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	340	\$324, 929	31	537
Collisions, butting.....	170	224, 196	17	520
Collisions, trains separating.....	168	61, 454	.....	97
Collisions, miscellaneous.....	910	352, 512	39	511
Total.....	1, 588	963, 091	87	1, 665
Derailments due to defects of roadway, etc.....	291	236, 351	9	321
Derailments due to defects of equipment.....	664	581, 428	9	152
Derailments due to negligence of trainmen, signalmen, etc.....	87	103, 148	14	152
Derailments due to unforeseen obstruction of track, etc....	62	98, 546	14	78
Derailments due to malicious obstruction of track, etc.....	17	19, 602	1	17
Derailments due to miscellaneous causes.....	394	371, 758	42	314
Total.....	1, 515	1, 410, 833	89	1, 034
Total collisions and derailments.....	3, 103	2, 373, 924	176	2, 699

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE 2a.—*Causes of thirty prominent train accidents (Class A).*

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, Derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	R	F and F	0	0	\$700	2	Approached station too fast; misjudged distance.
2	R	F and F	1	4	2, 187	21	Too high speed in fog. Engineman did not see flagman. Engineman, who was killed, had been on duty 17 hours 30 minutes.
3	B	P and P	0	38	2, 500	49	Operator omitted two words in writing a meeting order.
4	B	P and P	10	38	4, 000	22	Pilot misinterpreted dispatcher's order. See note in text below.
5	B	F and F	1	5	4, 000	27	Operator failed to deliver order. See note in text below.
6	R	P and F	0	1	4, 436	51	Engineman, 27 years' experience, ran past automatic signal indicating stop.
7	R	P and F	1	21	4, 800	23	Clear block signal given to passenger train while an empty engine was in block section. See note in text below.
8	R	F and F	0	2	6, 200	50	Engineman ran past automatic signal indicating stop. Brakeman riding on engine discharged for not seeing signal and taking measures to stop train.
9	B	P and F	0	23	7, 000	47	Operator, 3 months' experience, failed to deliver dispatcher's order.
10	B	P and P	1	10	10, 377	48	Men in charge of south-bound train overlooked meeting point.
11	B	F and F	1	4	10, 082	53	Conductor, engineman, and whole crew (on duty 16 hours) overlooked meeting orders; orders delivered to them only 30 minutes before.
12	B	F and F	0	1	12, 000	28	Conductor and engineman, east bound, misread orders.
13	B	P and P	0	5	12, 050	45	North bound encroached on time of south bound.
14	B	P and F	0	30	14, 579	57	Signalman failed to put block signal in stop position after passage of work train. See note in text below.
Total			15	187	101, 011		

TABLE 2a.—Causes of thirty prominent train accidents (Class A)—Continued.

DERAILMENTS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	D	P	1	8	\$1,255	11	Two cars of a passenger train having been detached at a junction ran back down grade and were derailed at a curve. Brake connections defective; one bolt missing; one hook so weak that it straightened out. Brakeman set hand brakes, but these defects thwarted his work.
2	D	F	0	0	2,800	59	Ran off derailing switch. Air brakes inoperative; brake-pipe cocks had been maliciously closed in three places; conductor had not properly tested air brakes.
3	D	F	0	0	5,110	17	Air brakes failed on steep grade; brake pipe found closed near engine; cause not explained. Engineman disobeyed rule to stop at head of grade.
4	D	F	1	1	6,500	58	Air brakes failed on 3.4 per cent grade. Brakes not tested after detaching helping engine; conductor and engineman discharged; conductor's service, as such, three months; engineman's, as such, two months.
5	D	P	9	18	6,710	40	Unexplained. Speed, 12 miles an hour. A switch at the point of derailment found broken may have been the cause.
6	D	P	0	4	7,825	14	Overhead bridge burned and fell on track.
7	D	P	0	0	8,000	38	Rail maliciously misplaced, presumably by dissatisfied track laborers.
8	D	F	0	0	10,000	67	Loose wheel.
9	D	P	0	2	10,000	43	Unexplained. Speed, 50 to 60 miles an hour on 1 per cent descending grade. Derailment occurred on bridge; track in good condition.
10	D	P	1	35	11,000	63	Misplaced switch; left misplaced by men of freight train over an hour before. See note in text below.
11	D	P	0	21	12,500	64	Excessive speed on track not well ballasted.
12	D	F	0	0	13,400	82	Steel dump car with top-heavy load; speed, 30 miles an hour.
13	D	F	2	2	16,000	12	Runaway; air brakes ineffective. Conjectured that angle cock had been closed purposely or accidentally by a tramp.
14	D	F	0	8	18,600	33	Runaway on 3 per cent grade. See note in text below.
15	D	P	0	0	21,700	72	Open draw. See note in text below.
16	D	P	0	2	27,900	4	Ran into wreck of freight trains. (Collision No. 1.)
Total			14	96	179,800		
Total collisions and derailments			29	283	280,911		

Collision No. 4 occurred about 11 p. m., and was between two passenger trains running on a single-track branch line, in consequence of an obstruction on the double-track main line, which was their usual route. Being on an unusual route the enginemen were guided by "pilot men," and the pilot man, being the only person on the train fully acquainted with the road, was chiefly responsible for seeing that the movement of the train was made in conformity to the rules. The pilot of the west-bound train was mainly at fault. He had received a dispatcher's order to run to a signal tower designated "S T," which was at the end of the double-track section of the branch, and at this tower he was to receive further orders, or, in the absence of such orders, to wait there. When he arrived at "S T" the telegraph operator at the tower delivered to him a message in regard to reducing

speed over a piece of new track which he was to traverse, and he carelessly took it for granted that this message was the dispatcher's order which he was expecting, and he proceeded with his train (on the single-track line). As soon as he read the order and found that it did not give him any right to proceed, he stopt the train and sent the fireman back to consult the conductor. The conductor, however, on receiving the order to run to "S T" had misread it, taking it for an order to run to "S J," which was the name of a tower some distance beyond. The conductor therefore sent back word by the fireman that his order was the same as that which had been given to the pilotman, and that it gave the train the right of road to "S J." On this the pilot assumed that he himself had been mistaken in reading his order, and proceeded, tho with a doubt in his mind. Before he had settled the doubt, however, the east-bound train was met, and the wreck occurred. The report says that the dispatcher's order was plainly written, and that there was no reason for mistaking the "T" for a "J." The conductor and the pilot were both experienced men. The conductor had been on duty about three hours. The engineman had been on duty all day, about fourteen hours, except that in the middle of the day his train was laid up about five hours at the terminus of its run.

In the case of collision No. 5 the operator who failed to deliver a meeting order and thereby caused a collision had at the time three other orders for delivery to the same train. The rules require that the operator report to the dispatcher the numbers of orders to be delivered to a given train, and also that he deliver to the conductor of the train a clearance card on which the numbers of the orders are entered. Concerning one of the four orders there was some discussion between the dispatcher and the operator, and the operator definitely stated that he had that order; but he neglected to enter it on the clearance card. The rules also require that meeting orders shall be sent to the operator at the station where the trains are to meet, but in this case the dispatcher, being unable to get a response from the operator at the meeting point, neglected to carry out the rule.

Collision No. 7 appears to have been due to carelessness in the management of permissive block signaling. The passenger train was given a clear block signal when the block was occupied by an empty engine which had preceded the passenger train. This engine was running on a caution card on account of the presence of still another engine in the block ahead of it. It appears that the signalman at the outgoing end of the block had not been advised, or denied having been advised, of the entrance of the second engine, and he authorized the giving of a clear signal to the passenger train before the block was clear.

Collision No. 14 was due to confusion at a block-signal tower where trains pass from a two-track line to a three-track line. A work train

past to the northernmost track of the three-track line and stopt. The next following train, a fast passenger train, was due in about fifteen minutes, and it should have been run on to the middle track of the three-track line; but the signalman neglected to return the signal to the stop position after the passage of the work train, and the fast train when it came on therefore received a clear signal for the northernmost track, the one occupied by the work train. It appears that there was no track circuit or other arrangement to insure the movement of the signal from the clear to the stop position after the passage of the work train. It was the duty of the flagman of the work train, according to the rules, to go back with a flag so as to be ready to stop the passenger train, but it appears that he depended on the signalman in the cabin to provide this protection—tho without looking at the signal to see whether or not the signalman had actually done so.

Derailment No. 10 was a disaster to a fast passenger train which ran thru a misplaced switch that could be seen by the engineman only a few seconds before he reached it—that is to say, about 500 feet away. The switch had been left in the wrong position by a brakeman of a freight train something over one hour before. The station agent is censured by the superintendent for not noticing that the switch had been left in the wrong position. There was no distant signal connected with the switch. The negligent brakeman had been in the service about two years. The conductor of the freight train had been in the service seventeen years, but his record was quite faulty.

Derailment No. 14 was primarily due to the runaway of a heavy train on a 3 per cent grade, tho the damage is believed to have been immediately due to the breaking of a wheel; but the whole trouble could undoubtedly have been prevented if the conductor of the train had made proper use of the air brakes. The train consisted of 37 cars of ore, 27 of them being steel cars carrying 50 tons each, and 10 of them wooden cars carrying 25 tons each. Shortly after beginning the descent of the grade the speed became uncontrollable. It is believed that a tramp rode on one of the cars and that he, without knowing what he was doing, moved the handle of an angle cock so as to close the train line air pipe near the engine. The increase in the speed occurred so rapidly that all of the three men on the front of the train jumped off; but the train reached a safety siding before the speed got above 35 miles an hour, and therefore it should have been stopt without serious damage. Marks on the ties showed, however, that one of the cars had been off the track for nearly a mile, and this car had the broken wheel. The broken wheel knocked the switch rails out of place, causing the derailment of the following cars. Before the broken car jumped the track the conductor had detached the caboose from the train, after closing the angle cocks in the air pipe both of the caboose and of the last freight car. If, instead of doing this, he had applied

the air brakes, in all probability he would have been able to stop the train or greatly to check its speed.

Derailment No. 15 was caused by the carelessness of the attendant at a drawbridge, who opened the draw for the passage of a vessel when the passenger train was approaching and after the engine of the train had past the stop signal. This signal was about one-third mile away from the bridge, and it appears that the bridge tender set it in the stop position immediately *after* the engine had past it. The signal being so far away from the bridge, and there being no lock to prevent the attendant from moving the draw after the train had past the signal, there was time to move the draw a few feet after the signal had been set and before the train reached the draw span. Tho the train ran upon the partly opened draw and the engine sank in the river, all of the occupants of the train escaped without serious injury.

TABLE NO. 3.—*Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....	.....	34	.....	16	.....	30	.....	.....
2	Adjusting coupler, cars accidentally started.....	1	6	.....	4	1	10	.....	.....
3	Careless manipulation of uncoupling lever.....	.....	2	.....	4	.....	8	.....	.....
4	Cars not equipped with automatic coupler.....	.....	2	.....	1	.....	.....	.....	.....
5	Coupler broken, using link and pin or chain.....	.....	4	.....	1	1	3	.....	.....
6	Coupling damaged cars.....	4	7	2	8	6	19	1	3
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....	.....	2	.....	.....	.....	7	.....	1
8	Coupling with chain or other emergency appliance because of uneven track.....	.....	.....	.....	.....	.....	.....	.....	.....
9	Coupling or uncoupling safety chains.....	.....	2	.....	.....	2	2	.....	.....
10	Fingers or hand caught between uncoupling lever and body of car.....	.....	48	.....	25	.....	70	.....	5
11	Uncoupling without using lever (unnecessary).....	.....	7	1	6	1	10	.....	.....
12	Uncoupling without using lever, uncoupling lever not in working order.....	.....	32	.....	25	1	57	1	2
13	Foot caught in frog, switch, or guard rail.....	3	3	1	2	2	.....	.....	.....
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	3	22	.....	14	4	37	.....	3
15	Opening knuckle when cars were near together, engine accidentally started.....	.....	2	.....	5	.....	7	.....	.....
16	Opening knuckle, part of defective coupler fell on foot.....	.....	3	.....	1	.....	1	.....	1
17	Opening knuckle, lost footing.....	.....	7	1	3	.....	6	.....	.....
18	Riding on car to uncouple, slipped off.....	1	3	.....	.....	2	3	.....	.....
19	Struck by object at side of track.....	.....	6	.....	6	.....	8	.....	.....
20	Caught by unexpected movement of car, due to slack running in.....	1	19	.....	17	2	17	.....	3
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	1	5	1	4	2	5	.....	.....
22	Uncoupling moving cars and lost footing.....	1	11	2	7	3	18	.....	.....
23	Parts hard to move, causing delay.....	.....	10	2	1	.....	8	.....	1
24	Went between cars unnecessarily and contrary to rule.....	2	12	1	3	.....	15	.....	2
25	Hand caught between projecting load and end of next car.....	.....	7	1	2	.....	6	.....	.....
26	No witness (fatal injury).....	3	.....	.....	.....	1	.....	2	.....
27	Other causes (see detailed list below).....	1	9	2	4	1	11	.....	2
28	Unexplained.....	.....	9	.....	1	.....	8	.....	1
Total.....		21	274	14	159	29	356	4	24

Details of injuries included in Table No. 3, subclass No. 27.

- A. 1. Foot caught by engine pilot.
A. 2. Holding up drawbar on engine; finger caught.
A. 3. Engine struck car too hard, pushing man against tank.
A. 4. Struck by corner of car.
A. 5. Glove caught while uncoupling.
A. 6. Uncoupling; scalded by water from engine stack.
A. 7. Struck hand against corner of car.
A. 8. Pin lifter struck man over eye.
A. 9. Foot squeezed by sliding hood.
M. 1. Plank fell from top of car on head.
M. 2. On footboard of engine; drawheads past.
M. 3. Torpedo exploded.
M. 4. On pilot of engine; pilot ran under brakebeam of car.
M. 5. Caught by projecting load.
M. 6. Struck by air hose.
M. 7. Caught by projecting log.
M. 8. Air hose struck face.
M. 9. Piece of coal fell from car.
M. 10. Arm caught in grab iron.
M. 11. On pilot of engine; couplers past.
J. 1. Lip of drawbar broke off, striking man in groin.
J. 2. Board fell from roof of car on head.
J. 3. Caught foot under wheel and fell across rail.
J. 4. Straightening pin chain; slipped.
J. 5. Head struck grab iron.
J. 6. Struck by lever handle.
J. 7. Put foot on rail; run over.
J. 8. Unhooking draft chain; caught hand in chain.
J. 9. Engine struck car too hard, causing man to fall against pilot.
J. 10. Manipulating coupler while riding on car; lost balance.

TABLE NO. 3A.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Train- men.	Train- men in yards.	Yard train- men.	Other em- ployees.
Loss of feet	10	3	5	.....
Loss of legs .....	.....	.....	2	.....
Loss of arms	1	.....	3	.....
Loss of hands	2	2	2	.....
Loss of fingers	6	5	14	.....
Loss of toes	2	1	1	.....
Fractured skull .....	.....	.....	.....	.....
Fractured leg	3	.....	2	.....
Fractured arm	8	2	2	.....
Fractured collar bone or ribs	4	1	5	.....
Fractured other bones	5	4	6	.....
Contusion of head or body	32	18	49	6
Contusion or laceration of feet	31	14	30	1
Contusion or laceration of toes	3	2	2	.....
Contusion or laceration of legs	5	9	17	.....
Contusion or laceration of arms	17	9	14	3
Contusion or laceration of hands	34	25	57	2
Contusion or laceration of fingers	39	54	127	10
Dislocation .....	.....	.....	1	.....
Internal injuries	3	4	7	1
Sprains	11	4	7	1
Shock .....	.....	.....	.....	.....
Miscellaneous	3	2	3	.....
Total injuries	274	159	356	24
Killed	21	14	29	4
Total killed and injured	295	173	385	28

RECAPITULATION.

Killed	68
Injured	813
Total killed and injured	881

TABLE NO. 4.—Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car .....	....	10	....	5	....	12	1	5
	2 Ice or snow .....	....	1	....	....	....	1	....	1
	3 Parting of train	1	7	1	3	2	6	1	1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3	2	71	....	29	3	76	5	18
	5 While setting brakes	6	32	....	24	4	52	....	4
	Fell from—								
	6 Coal car .....	....	6	....	3	....	5	....	4
	7 Freight car other than box or coal car	1	23	1	17	1	13	6	24
	8 Engine or tender	7	74	3	41	5	32	1	13
	9 Passenger car .....	....	6	....	1	....	....	1	4
C7	10 Engines, tenders, or cars (all kinds) not in motion .....	....	65	....	38	....	16	2	31
	11 Miscellaneous causes	12	195	5	111	4	164	4	96
	12 Not clearly explained	17	83	2	27	11	46	3	29
	13 Slipped getting on moving trains or cars	6	117	8	42	....	68	10	56
	14 Jumping off moving trains	2	117	2	46	2	74	7	55
	15 Jumping from engines or cars anticipating collision, derailment, or other accident	3	48	....	10	1	7	....	4
	16 Fell from engines or cars by reason of defective handholds and sill steps .....	....	26	....	18	....	36	....	1
	17 Getting on or off moving engine	8	100	8	86	8	121	2	37
	18 Caught in frog, guard rail, or switch .....	....	1	....	1	....	1	....	1
	Total	65	982	20	502	36	730	43	384

YEARLY TABLES.

This bulletin completes the publication of the accident records under the law of March 3, 1901, for five years, and the following table (A) gives the aggregates for the year ending June 30, 1906, of the items which are given in Table No. 1 of the quarterly returns. The total number of casualties shown in Table A is 70,934 (4,225 killed and 66,709 injured).

This table includes the following statistics which did not appear in the quarterly bulletins, the reports from which they are taken having been received after the bulletins were printed: Four employees killed and 3 passengers and 28 employees injured; damage to railroad companies' property, \$2,278.

The totals of these yearly tables are not comparable with those given in the Commission's Annual Statistical Reports, for the reason that the monthly reports deal only with accidents to passengers and to employees while actually on duty. The monthly reports take no account of accidents to "other persons." These appear in the Annual Reports and include casualties at highway crossings to trespassers, to persons walking along the track, accidents to employees in shops remote from the railroad, and all other accidents not occurring to passengers and to employees actually on duty.

TABLE A.—Summary of casualties to persons, year ending June 30, 1906.

	Passengers (a and b)		Persons car- ried under agreement, etc. (bb).		Total (a, b, and bb)		Trainmen.		Trainmen in yards.		Yard train- men (switch- ing crews).		Other em- ployees.		Total em- ployees.		Total all per- sons.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	89	3,596	31	409	120	4,006	331	2,348	53	609	43	429	57	463	484	3,909	604	7,914
Derailments.....	48	2,341	12	815	60	2,656	220	1,866	17	209	27	282	49	290	313	2,116	573	4,772
Miscellaneous train accidents, includ- ing locomotive boiler explosions....	0	86	2	31	2	117	61	1,086	5	215	10	103	6	104	82	1,453	94	1,575
Total train accidents.....	137	6,023	45	755	182	6,778	612	4,769	75	1,093	80	764	112	857	879	7,493	1,061	14,261
.....at trains							101	1,060	65	695	180	1,646	16	102	311	3,508	311	3,508
.....overhead							75	7,303	42	2,871	55	2,735	96	2,945	263	15,854	263	15,854
.....of track,	7	30	1	16	3	46	80	733	27	280	16	402	9	62	132	1,497	140	1,543
.....or while	140	1,962	4	65	144	2,027	295	4,435	98	2,252	175	3,156	145	1,409	713	11,253	857	13,280
.....	66	2,118	18	216	84	2,334	197	591	98	394	119	363	1,095	14,686	1,504	15,384	1,593	18,263
Total (other than train acci- dents).....	213	4,110	23	297	296	4,497	748	14,143	825	6,492	495	8,302	1,360	19,104	2,928	48,041	3,164	52,449
Total all classes.....	350	10,133	68	1,052	418	11,135	1,360	18,912	400	7,585	575	9,066	1,472	19,961	3,807	53,524	4,225	65,709

From Table B, next following, comparisons may be made for the last four years.

TABLE B.—*Casualties to passengers and employees, years ending June 30.*

	1906.		1905.		1904.		1903.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers:								
In train accidents.....	182	6,778	350	6,496	270	4,945	164	4,424
Other causes	236	4,407	187	3,542	150	3,132	157	2,549
Total.....	418	11,185	537	10,040	420	8,077	321	6,973
Employees:								
In train accidents.....	879	7,483	798	7,052	844	6,990	895	6,440
In coupling accidents...	311	3,503	243	3,110	278	3,441	253	2,788
Overhead obstructions, etc	182	1,497	92	1,185	116	1,210	93	992
Falling from cars, etc...	713	11,253	633	9,237	700	9,371	678	8,025
Other causes	1,772	31,788	1,495	24,842	1,429	22,254	1,314	20,759
Total.....	3,807	55,524	3,261	45,426	3,367	43,266	3,233	39,004
Total passengers and employees	4,225	66,709	3,798	55,466	3,787	51,343	3,554	45,977

The following tables are self-explanatory, being consolidations of the quarterly tables giving the same classes of facts:

TABLE C.—*Collisions and derailments; damage to cars, engines, and roadway; years ending June 30.*

	1906.				1905.			
	Num- ber.	Loss.	Persons killed.	Persons injured.	Num- ber.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	1,722	\$1,720,365	169	2,427	1,493	\$1,463,012	152	2,085
Collisions, butting.....	866	1,599,568	251	2,733	707	1,451,906	304	2,453
Collisions, trains separat- ing.....	901	359,156	9	375	972	440,495	11	369
Collisions, miscellaneous ..	3,705	1,640,669	175	2,379	3,052	1,493,641	141	2,201
Total.....	7,194	5,319,758	604	7,914	6,224	4,849,054	608	7,111
Derailments due to defects of roadway, etc	1,287	918,056	38	1,608	1,007	777,433	50	1,446
Derailments due to defects of equipment	2,811	2,226,153	42	802	2,605	2,068,620	40	798
Derailments due to negli- gence of trainmen, sig- nalmen, etc.....	391	318,067	54	494	341	272,254	40	418
Derailments due to unfore- seen obstruction of track, etc	300	472,653	76	456	332	676,001	177	646
Derailments due to ma- licious obstruction of track, etc	65	106,859	16	94	76	142,761	84	196
Derailments due to mis- cellaneous causes	1,407	1,297,643	147	1,318	1,010	925,533	115	1,334
Total.....	6,261	5,339,431	373	4,772	5,371	4,862,602	456	4,838
Total collisions and derailments.....	13,455	10,659,189	977	12,686	11,595	9,711,656	1,064	11,949

TABLE D.—Causes of accidents to employees in coupling and uncoupling cars, year ending June 30, 1906.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....	....	100	....	54	1	120	....	4
2	Adjusting coupler, cars accidentally started.....	4	26	....	15	5	55	....	2
3	Careless manipulation of uncoupling lever.....	....	7	....	15	....	22	....	1
4	Cars not equipped with automatic coupler.....	1	7	....	4	....	9	....	....
5	Coupler broken, using link and pin or chain.....	2	20	....	3	2	23	....	3
6	Coupling damaged cars.....	9	43	7	29	19	89	4	8
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling..	1	8	....	1	....	38	....	1
8	Coupling with chain or other emergency appliance because of uneven track.....	....	2	....	2	....	1	....	1
9	Coupling or uncoupling safety chains.....	....	10	....	5	4	13	....	3
10	Fingers or hand caught between uncoupling lever and body of car.....	....	203	....	116	....	306	....	22
11	Uncoupling without using lever (unnecessary).....	2	32	1	18	3	31	....	3
12	Uncoupling without using lever, uncoupling lever not in working order.....	8	104	2	121	7	212	1	6
13	Foot caught in frog, switch, or guard rail.....	8	14	5	12	15	19	1	1
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	10	102	8	65	12	148	....	12
15	Opening knuckle when cars were near together, engine accidentally started.....	....	13	....	9	1	26	1	....
16	Opening knuckle, part of defective coupler fell on foot.....	....	14	....	11	....	25	....	2
17	Opening knuckle, lost footing.....	12	24	1	16	5	32	....	....
18	Riding on car to uncouple, slipped off.....	4	4	....	5	4	17	....	....
19	Struck by object at side of track.....	1	18	....	16	4	42	....	1
20	Caught by unexpected movement of car, due to slack running in.....	8	78	8	54	8	98	....	8
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	4	10	3	12	2	18	1	2
22	Uncoupling moving cars and lost footing.....	6	50	8	28	13	90	1	2
23	Parts hard to move, causing delay.....	....	28	2	24	2	43	1	2
24	Went between cars unnecessarily and contrary to rule.....	6	48	3	12	6	41	1	4
25	Hand caught between projecting load and end of next car.....	....	18	2	8	1	29	....	....
26	No witness (fatal injury).....	16	....	12	....	11	....	3	....
27	Other causes.....	3	60	3	38	3	96	1	11
28	Unexplained.....	1	17	....	7	2	8	....	3
Total.....		101	1,060	65	695	130	1,646	15	102

TABLE DX.—*Nature of injuries to employees in coupling and uncoupling cars, year ending June 30, 1906.*

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other employees.
Loss of feet.....	17	5	18	1
Loss of legs.....	3	5	6	.....
Loss of arms.....	6	2	14	1
Loss of hands.....	8	4	.....	.....
Loss of fingers.....	32	16	47	1
Loss of toes.....	3	5	3	.....
Fractured skull.....	.....	.....	2	.....
Fractured leg.....	11	2	11	1
Fractured arm.....	22	8	16	3
Fractured collar bone or ribs.....	16	8	38	4
Fractured other bones.....	9	.....	16	.....
Contusion of head or body.....	97	76	190	13
Contusion or laceration of feet.....	113	69	147	8
Contusion or laceration of toes.....	17	11	25	1
Contusion or laceration of legs.....	24	27	66	2
Contusion or laceration of arms.....	64	89	91	8
Contusion or laceration of hands.....	139	121	223	17
Contusion or laceration of fingers.....	366	228	547	31
Dislocation.....	2	2	2	.....
Internal injuries.....	45	30	78	5
Sprains.....	38	10	68	3
Shock.....	1	1	1	.....
Miscellaneous.....	26	19	29	3
Total injuries.....	1,060	695	1,646	102
Killed.....	101	65	130	15
Total killed and injured.....	1,161	760	1,776	117

RECAPITULATION.

Total killed.....	311
Total injured.....	3,503
Total killed and injured.....	3,814

TABLE E.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines, year ending June 30, 1906.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	1	31	1	13	.....	25	1	9
	2 Ice or snow.....	.....	38	1	21	1	26	1	4
	3 Parting of train.....	2	33	2	18	3	26	3	8
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	14	312	4	181	22	371	15	82
	5 While setting brakes.....	16	152	1	87	15	202	.....	13
	Fell from—								
	6 Coal car.....	3	27	1	11	1	18	2	18
	7 Freight car other than box or coal car.....	4	36	1	23	2	24	8	51
	8 Engine or tender.....	35	373	8	190	28	127	6	55
	9 Passenger car.....	2	12	.....	4	.....	2	1	16
C7	10 Engines, tenders, or cars (all kinds) not in motion.....	1	344	1	173	.....	68	3	165
	11 Miscellaneous causes.....	25	478	10	242	16	384	11	167
	12 Not clearly explained.....	139	264	41	99	46	169	23	76
	13 Slipped getting on moving trains or cars.....	21	495	10	219	8	303	27	237
	14 Jumping off moving trains.....	8	756	3	352	9	575	25	292
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	4	169	.....	39	1	56	.....	22
	16 Fell from engines or cars by reason of defective handholds and sill steps.....	2	124	.....	73	1	144	.....	3
	17 Getting on or off moving engine.....	28	788	13	504	22	628	18	191
	18 Caught in frog, guard rail, or switch.....	.....	4	1	3	.....	8	.....	8
Total.....		305	4,436	98	2,252	175	3,156	144	1,410

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 17 records one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring at 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals, and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches and a collision which was due to failure of "controlled manual" block signal working.

Bulletin No. 18 shows total casualties much larger than in the preceding quarters, due largely no doubt to an enormous increase in traffic. Many accidents are reported in which the men had been on duty excessively long hours. One collision, killing 17 persons, was due to the error of an engineman of five months' experience, who ran past five warning signals. Another collision, killing 10 persons, was due to the failure of the men in charge of a freight train to identify opposing passenger trains. One derailment of a passenger train, killing 13 persons, was reported as due to some cause that could not be discovered.

Bulletin No. 19 is like Bulletin 18 in showing a large number of casualties. One butting collision, due to failure of train dispatching, caused 34 deaths and 24 injuries and \$50,000 damages, besides the damages for deaths and injuries of persons. One collision was due to the negligence of men who had been worked flagrantly long hours. Particulars are given of a number of collisions due to complicated and unusual causes.

^a For notes on Bulletins 1 to 16, inclusive, see Bulletin No. 17 or No. 18.

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2
ACCIDENT BULLETIN,

No. 21.

JULY, AUGUST, AND SEPTEMBER, 1906.

1. INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1907.

ACCIDENT BULLETIN,

No. 21,

SHOWING COLLISIONS AND DERAILMENTS OF TRAINS

AND

CASUALTIES TO PERSONS

DURING

JULY, AUGUST, AND SEPTEMBER, 1906.

INTERSTATE COMMERCE COMMISSION,
WASHINGTON, D. C.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1907.

THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. FRANCIS M. COCKRELL, of Missouri.

Hon. FRANKLIN K. LANE, of California.

Hon. EDGAR E. CLARK, of Iowa.

Hon. JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 21.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING SEPTEMBER 30, 1906.

The number of persons killed in train accidents during the months of July, August, and September, 1906, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 267, and of injured, 3,891. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 19,850 (1,182 killed and 18,668 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.^a

TABLE No. 1.—*Casualties to persons, July, August, and September, 1906.*^{b c}

	Passen- gers.		Persons carried un- der agree- ment or contract.		Total (a, b, and bb).		Train men.		Train men in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	25	902	2	69	27	971	72	573	14	191
Derailments	16	811	9	107	25	918	61	384	8	60
Miscellaneous train accidents, including locomotive-boiler explosions .....	....	16	....	4	....	19	10	252	1	68
Total train accidents	41	1,728	11	180	52	1,908	143	1,209	23	319
Coupling or uncoupling.....	....	....	....	....	....	....	32	295	12	174
While doing other work about trains or while attending switches.....	....	....	....	....	....	....	21	2,182	12	724
Coming in contact with overhead bridges, structures at side of track, etc.....	2	13	1	2	3	15	22	211	1	65
Falling from cars or engines or while get- ting on or off.....	36	551	6	21	42	572	84	1,240	30	587
Other causes	11	727	2	76	13	803	68	190	33	84
Total (other than train accidents)...	49	1,291	9	99	58	1,390	227	4,118	88	1,634
Total all classes.....	90	3,019	20	279	110	3,298	370	5,327	111	1,953

^a In Table No. 1 the passengers have been divided into three classes. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight.

^b Table No. 1 is continued on next page.

^c Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

TABLE NO. 1.—*Casualties to persons, July, August, and September, 1906*—Continued.

	Yard train men (switching crews).		Other employees.		Total employees.		Total all persons.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	7	114	22	152	115	1,030	142	2,001
Derailments	5	67	6	66	80	577	105	1,495
Miscellaneous train accidents, including locomotive-boiler explosions	7	34	2	22	20	376	20	395
Total train accidents	19	215	30	240	215	1,983	267	3,891
Coupling or uncoupling	33	451	4	22	81	942	81	942
While doing other work about trains or while attending switches	14	737	26	789	73	4,432	73	4,432
Coming in contact with overhead bridges, structures at side of track, etc	7	107	2	14	32	397	35	412
Falling from cars or engines or while getting on or off	42	800	33	399	189	8,026	231	3,598
Other causes	26	83	355	4,233	482	4,590	495	5,393
Total (other than train accidents)...	122	2,178	420	5,457	857	13,387	915	14,777
Total all classes	141	2,393	450	5,697	1,072	15,370	1,182	18,668

The totals in Table No. 1 continue large. In some few details there are small decreases from the corresponding quarter one year ago, but in general there is no improvement. The causes of the great losses of life and property here shown have been repeatedly discussed in preceding bulletins. The number of passengers killed in train accidents (52 in this quarter) is large, though it includes the results of only three particularly notable cases, namely, collision No. 28 and derailments 10 and 12. The comparison with Quarterly Bulletin No. 17 (a year ago) and also with Bulletin 20 shows the following numbers killed:

	Bulletin 21.	Bulletin 20.	Bulletin 17.
1. Passengers killed in train accidents	52	27	43
2. Passengers killed, all causes	110	81	122
3. Employees killed in train accidents	215	167	229
4. Employees killed in coupling	81	68	74
5. Total passengers and employees killed, all causes	1,182	983	1,058

The total number of collisions and derailments in the quarter now under review was 3,672 (1,891 collisions and 1,781 derailments), of which 269 collisions and 201 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,932,760. Given more in detail, these facts appear as below:

TABLE No. 2.—*Collisions and derailments.*

	Number.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	424	\$388,807	40	463
Collisions, butting.....	257	428,762	59	703
Collisions, trains separating.....	183	92,787	4	83
Collisions, miscellaneous.....	1,027	464,684	39	752
Total.....	1,891	1,375,040	142	2,001
Derailments due to defects of roadway, etc.....	318	255,625	14	353
Derailments due to defects of equipment.....	808	620,560	19	224
Derailments due to negligence of trainmen, signalmen, etc.....	118	138,830	19	157
Derailments due to unforeseen obstruction of track, etc....	93	146,814	17	270
Derailments due to malicious obstruction of track, etc....	18	26,924	5	19
Derailments due to miscellaneous causes.....	426	368,967	31	472
Total.....	1,781	1,557,720	105	1,495
Total collisions and derailments.....	3,672	2,932,760	247	3,496

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE 2a.—*Causes of forty-five prominent train accidents (Class A).*

[NOTE.—R. stands for rear collision; B., butting collision; M., miscellaneous collisions; D., derailment; P., passenger train; F., freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	R	F. and F.....	2	2	\$440	86	Two passengers killed in freight caboose. Train standing at station (1 a. m.) with indistinct tail lights.
2	M	P. and F.....	0	0	600	15	Collision at crossing. Signalman disconnected interlocking so that signals could be set clear for both roads at the same time and went out for a social evening. While he was gone, yard men disobeyed his verbal instructions not to enter upon the crossing.
3	B	F. and F.....	1	16	2,300	45	Conductor of work train failed to arrange for flag protection; 16 laborers injured.
4	R	F. and F.....	0	0	2,535	78	Block-signal operator became confused and gave false clear signal; engineman approached station, disregarding rule to run under control.
5	R	P. and F.....	0	3	2,700	53	Flagman mistook whistle signal to go out, interpreting it to mean come in.
6	R	F. and F.....	0	1	3,000	4	Automatic block signal showed clear falsely; cause not discovered, but believed to be residual magnetism due to lightning.
7	R	P. and F.....	2	6	3,045	64	Wrong signal given at interlocking. See note in text below.

TABLE 2a.—Causes of forty-five prominent train accidents (Class A)—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
8	B	F. and F.	0	4	\$3,113	99	Extra train, waiting on side track for two trains, started out after passage of one train; had answered whistle signal of the passing train.
9	R	F. and F.	7	16	3,420	61	Fast running under permissive block signal. See note in text below.
10	B	F. and F.	2	3	3,600	51	False clear block signal. See note in text below.
11	R	F. and F.	1	2	3,700	57	Occurred 3 a. m. Signalman at B (3 months' experience) gave false clear signal. The signalman at C, a man of 6 months' experience, claims that he told B to give a permissive signal. The flagman of the leading train was killed while sitting in his caboose.
12	B	F. and F.	0	4	3,700	97	Operator, with 4 train orders in his possession, delivered wrong one to a conductor; had sent conductor's signature to dispatcher before train arrived.
13	B	F. and F.	1	2	3,720	6	Butting collision of extra trains. Dispatcher (4 years' experience) forgot both and sent meeting orders to neither.
14	M	F. and F.	0	2	3,980	41	Cars broke away from rear of train and ran back down grade. See note in text below.
14a	B	F. and F.	0	2	3,980	89	Error in order. Dispatcher sent it "Right over 27." Operator, 20 years 9 months of age, copied it "Right over 25," and dispatcher did not detect wrong repetition.
15	B	P. and P.	2	5	4,200	80	Mistake in order. Receiving operator omitted two words, and dispatcher failed to check the error in the repetition.
16	R	F. and F.	2	0	4,900	90	Inefficient flagging; train approached station not under control. Men on leading train on duty 22 hours; on following train, 19 hours.
17	B	F. and F.	0	1	5,013	55	Continued trip after losing right to road by being 12 hours late. Engineman 1 month in the service; conductor, 4 months.
18	M	F.	1	2	6,500	46	Train parted; rear portion ran into forward; 32 cars in train, only 10 air-braked. Conductor intrusted making up of train to brakeman; this brakeman killed.
19	R	P. and P.	3	36	7,035	95	Failure of air brakes. Angle cock closed in middle of train. Report says cause unknown.
20	B	F. and F.	0	0	7,880	54	Engineman overlooked meeting order. See note in text below.
21	B	F. and F.	1	5	10,000	60	Mistake in writing name of station in train order. Operator (experienced) can not explain.
22	M	P. and F.	4	35	11,000	91	Freight train switching on main track on time of passenger train.
23	B	F. and F.	4	2	12,000	13	Engineman, southbound, overlooked meeting order; conductor slow in applying brakes.
24	M	P. and P.	2	3	12,750	81	Passenger train on siding drifted out onto main track while engineman was reading orders; train struck by express train passing in same direction.
25	M	P. and F.	0	8	12,800	79	Freight train on siding broke in two; 14 cars ran back down grade. Conductor and brakeman tried to stop cars, but brakes were defective.
26	B	F. and F.	7	1	13,450	92	Engineman overlooked orders; engineman and conductor killed. A brakeman called engineman's attention, but while he read order to verify brakeman's assertion, collision occurred.
27	M	F. and F.	0	0	13,600	94	Collision at meeting point. Southbound approached not under control. See note in text below.
28	B	P. and F.	17	56	14,500	12	Confusion of orders. See note in text below.
29	B	F and F.	2	5	15,000	3	Conductor, engineman, and flagman forgot meeting order. Flagman had signed for conductor; conductor asleep in caboose at time of collision.
30	B	F and F.	2	4	16,083	8	Misinterpretation of orders; conductor and engineman, on duty 18 hours; used main track until 9.30 when order gave them only till 9.
31	R	F and F.	0	0	16,835	87	Train stalled 35 minutes failed to flag. Men on duty 14 hours 35 minutes.
32	B	F and F.	3	5	29,200	98	Conductor and engineman of extra train overlooked regular.
Total			66	226	256,529		

TABLE 2a.—Causes of forty-five prominent train accidents (Class A)—Continued.

DERAILMENTS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	D	P	0	7	\$2,600	35	Misplaced switch. Switch tender, having several switches to watch, forgot this one; on duty 18 hours, the yard being short of men.
2	D	F	0	1	4,050	83	Passenger car and 9 freight cars ran away down steep grade. Conductor and brakeman carelessly left cars with hand brakes not properly set.
3	D	P	0	12	5,100	20	Track out of gauge $\frac{1}{4}$ inch; engine swayed so violently as to break a splice bar. Speed, 50 miles an hour; center of boiler 9 feet 6 inches above rail.
4	D	F	0	3	5,700	105	Freight cars ran back down 3 per cent grade; brakeman neglected to set enough hand brakes.
5	D	P	0	32	6,000	106	Washout; 5.45 a. m.; section foreman blamed for not going out promptly in storm.
6	D	P	2	4	7,000	115	Open draw; engineman (good record) killed.
7	D	P	0	36	8,200	102	Ran into burning trestle bridge, 6.50 a. m. Fire probably set by spark from a locomotive.
8	D	F	2	2	8,780	34	Runaway on steep grade; engineman lost his head and did not recharge air reservoir.
9	D	F	0	0	11,600	21	Bridge knocked down by boom of steam shovel.
10	D	P	7	40	18,265	23	Excessive speed. See note in text below.
11	D	P	5	60	38,000	108	Pile bridge weakened by high water. Bridge rebuilt in 1904; 17 $\frac{1}{4}$ feet high, spans 15 feet.
12	D	P	9	43	57,300	101	Misplaced switch. Switch light not burning, having been extinguished by high wind. Train approached at 60 miles an hour.
Total derailments..			25	240	172,595		
Total derailments and collisions			91	466	429,124		

Collision No. 28, the worst in the list, killing 17 persons, was between an eastbound passenger train and a westbound freight. The collision occurred between R and H (H being 6 miles east of R). At R the night operator held an order for the passenger train to meet the freight at R, but while he was outside of his office with this order, intending to deliver it to the men in charge of the passenger train, the day operator, who had gone off duty a short time before, went back into the office and, hearing a call from the dispatcher, took an order annulling the one which had been carried out. This order would have the effect of permitting the train to proceed, but without waiting for the final approval ("complete") of the dispatcher, which, under the rule, is absolutely necessary before it is permissible to act on an order, he shouted through the window to the operator outside to permit the train to proceed. This was done, and the train went on to its destruction. The westbound train had, meanwhile, passed H, because the original order, to meet at R, as delivered to that train, was still in force.

The operator who recklessly allowed the eastbound train to proceed on the authority of an order which had not been approved was 21 years old, and had been in the service of the company over four years.

Collision No. 7. occurred at about 10 p. m., and was due to confusion at an interlocking tower on a four-track line. A locomotive (without

train) approaching on the eastbound passenger track was to have been diverted to the freight track, and (after the engine had stopped) the switches and signals were so set. After the engine started the leverman began to set the signals and switches for a following passenger train (approaching on the same passenger track), but acted so quickly that he threw the cross-over switch before the empty engine reached it, though it had passed the signal. The engineman, seeing the mistake, stopped; but knowing the passenger train was due he started ahead again slowly, thinking the signal was meant to direct him to proceed to the limits of the interlocking. The leverman then signalled the engine to stop, and immediately followed this with a signal to set back. The engineman, not being satisfied with this, whistled for signals again. He was then given a violent signal to back up, the leverman believing the engine to be on the freight track, to which he supposed it had crossed. The engineman started to back his engine, but just then saw the passenger train approaching at a high speed. He reversed his engine, starting it in the same direction as the passenger train was running, and by so doing lessened the shock of the collision considerably, though the passenger train was running about 50 miles an hour when it struck. Both the leverman and the signalman (his superior) were men of experience, but both of them thought that the empty engine passed the tower on the freight track.

Collision No. 9 in which a work train, not in motion, was run into at the rear by a following freight train, killing 7 and injuring 12 of the workmen on the work train, was due to the excessive speed at which the freight train was running. The work train had stopped to take water and the freight train had been allowed to proceed into the block section under a permissive signal, which required the engineman to run at a rate of speed sufficiently low to avoid the possibility of colliding with any standing train; but this requirement was violated. The experience of this engineman was one year eight months.

Collision No. 10 was due to what appears to have been gross carelessness on the part of a block signalman on a single-track line. After giving a clear signal to a northbound train, the train was delayed so that it could not accept and use the signal. The train dispatcher then directed the signalman to change the signal to stop, but he did not do so, and the northbound train soon afterwards started and collided with a southbound which had been admitted to the block section under the authority of the train dispatcher after he had ordered the change from "clear" to "stop." The signalman absconded immediately after committing this error.

Collision No. 14, occurring at night, was due to a defect in coupling apparatus and to cars being left standing on a steep grade without sufficient hand brakes being set to hold them. A train of eleven cars and a caboose arrived at W., and entered a sidetrack to unload freight.

In moving the train back a short distance, the eleventh car became uncoupled from the tenth, and with the caboose behind it ran back down grade 5 miles to the point of collision. The train men were busy unloading freight and did not discover the breakaway until too late to stop the detached cars. The separation of the caboose and express car from the rest of the train was due to the clevis of the lock pin of the coupler of the freight car ahead becoming caught on the buffer of the express car, lifting the pin. The report indicates that the hand brake was set on the caboose, but that this was not sufficient to prevent the two cars from running down the grade. The collision wrecked the express car and the caboose, and the wreck took fire. The damage due to the collision and fire together amounted to \$3,930.

Collision No. 20 was a butting collision due to forgetfulness on the part of an engineman 21 years old, who had been on duty thirty-nine hours and twenty-five minutes. He had received a meeting order, but had put it into his pocket without reading it. He ran past the meeting place and struck the opposing train at about 12 miles an hour. This engineman had been in the service four years, having been appointed fireman at the age of 17, and had been an engineman about ten months. He had been on duty from 11 p. m. on Friday until 2.50 p.m. on Sunday. The conductor, who had been on duty the same length of time, tried to signal the engineman to stop. If, instead of this, he had applied the air brakes he might have prevented the collision.

Collision No. 27, causing damage to engines and cars amounting to \$13,600, was due apparently to extraordinary carelessness in running a heavy freight train down a steep grade, depending entirely on the hand brakes as a means of controlling the speed. It was a southbound freight train. The air brakes had been made unserviceable by the breaking of the reversing rod of the air pump on the engine. The conductor notified the train dispatcher at A that he should not dare to start for B, the grade being 124 feet per mile, descending, unless the up freight, which he expected to meet at B, could take the side track (the rule requiring that ordinarily southbound trains should take the siding). The dispatcher, who had been on this division only three weeks, at once gave the desired order, and the southbound train proceeded. It consisted of 61 cars, 17 of them loaded. The conductor, two brakemen, and the fireman manned the brakes, but they were unable to control the train, and it struck the northbound train, at about 15 miles an hour, just as the latter was entering the side track at B. The wreck took fire, presumably from the wrecked engine, and the damage was largely due to the fire. The dispatcher, who should have ordered the southbound train held until another engine could be procured, which would not have been long, had had twenty years' experience on other roads. The conductor and the engineman of the

southbound train, as well as the two brakemen, had had long experience on trains. They had been on duty only a few hours.

Derailment No. 10 occurred on a 10 degree curve (superelevation 5½ inches) at the exit of a tunnel, and the engine and first two cars fell into a lake, the engine and tender being entirely submerged. A gas tank of the baggage car exploded and set fire to the smoking car, burning several persons. The tender was the first vehicle to jump the track, but as no defect could be found in its wheels or running gear, the conclusion is that the derailment was due to excessive speed. The train was running at about 45 miles an hour. The engineman was killed, his body being found in the cab of the locomotive at the bottom of the lake. Of the other persons killed, 3 were passengers.

TABLE NO. 3.—*Details of Table No. 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot		19		12		34		1
2	Adjusting coupler, cars accidentally started			1	5	2	6		1
3	Careless manipulation of uncoupling lever		4		2		4		2
4	Cars not equipped with automatic coupler		5		2		3		
5	Coupler broken, using link and pin or chain	8			4	8	10		
6	Coupling-damaged cars	1	14		9	8	21	1	
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling		6		2	2	11		
8	Coupling with chain or other emergency appliance because of uneven track		1				4		
9	Coupling or uncoupling safety chains	1	2		4		5		1
10	Fingers or hand caught between uncoupling lever and body of car		68		27		38		3
11	Uncoupling without using lever (unnecessary)		10		6	1	7		1
12	Uncoupling without using lever, uncoupling lever not in working order	1	43		29	4	66		1
13	Foot caught in frog, switch, or guard rail	2	2	1	1	6	5	1	
14	Opening or closing knuckle when cars were near together, miscalculated speed	1	22		18	4	29		3
15	Opening knuckle when cars were near together, engine accidentally started		1		4	1	5		
16	Opening knuckle, part of defective coupler fell on foot		1		1		8		1
17	Opening knuckle, lost footing	3	6	3	4	1	17		
18	Riding on car to uncouple, slipped off	4	9		1	2	7	1	
19	Struck by object at side of track	1	9	1	2		11		2
20	Caught by unexpected movement of car, due to slack running in	4	19		16		23		2
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals	4	4	1	3		7		
22	Uncoupling moving cars and lost footing	3	7	2	5		14		
23	Parts hard to move, causing delay		7		3		15		
24	Went between cars unnecessarily and contrary to rule	2	12	2	5	2	19		3
25	Hand caught between projecting load and end of next car		5		2		5		
26	No witness (fatal injury)	2		1		2			
27	Other causes (see detailed list below)		14		4		19		1
28	Unexplained		5		3		8	1	
Total		32	295	12	174	33	451	4	22

Details of injuries included in Table No. 3, subclass No. 27.

- J. 1. Jar caused brake wheel to fall on head.
- J. 2. Stepped on switch stand; sprained ankle.
- J. 3. Raising lever; was ruptured.
- J. 4. Standing on car; knocked off by sudden movement of car.
- J. 5. Put foot on rail; run over.
- J. 6. Drawhead broken, and piece struck hand.
- J. 7. Glove caught.
- J. 8. On inside of sharp curve; squeezed.
- J. 9. Stepped in hole.
- J. 10. Stepped on nail.
- J. 11. Gave locking dog sudden jerk and tore hand.
- J. 12. Adjusting coupler; struck hand with bolt.
- A. 1. Lever chain broke and struck hand.
- A. 2. Car door fell on head.
- A. 3. Cut foot on broken glass.
- A. 4. Struck by air hose.
- A. 5. Piece of coal fell on head.
- A. 6. Lost footing and fell on track.
- A. 7. Load of rails shifted, catching hand.
- A. 8. Lever flew up and struck leg.
- A. 9. Stepped into water box, scalding foot.
- A. 10. Lump of coal struck head.
- A. 11. Lever on gravel car struck hand.
- A. 12. Timber fell from car, breaking leg.
- S. 1. Piece of coal fell on heel.
- S. 2. Clothes caught on car; stomach crushed.
- S. 3. Lever flew up and struck chest.
- S. 4. Stepped on nail.
- S. 5. Jar of coupling caused acid to fly in face.
- S. 6. Stepped in a hole.
- S. 7. Struck in neck by lever.
- S. 8. Piece of scrap fell, cutting chest.
- S. 9. Opening knuckle; assistant jerked lever, cutting finger.
- S. 10. Lever flew over, striking hand.
- S. 11. Lock pin lever caught hand.
- S. 12. Struck by lever in side.
- S. 13. Struck arm against corner of car.

TABLE 3A.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Train- men.	Train- men in yards.	Yard train- men.	Other em- ployees.
Loss of feet.....	8	2	8	.....
Loss of legs.....	2	.....	4	1
Loss of arms.....	2	8	4	.....
Loss of hands.....	.....	2	8	.....
Loss of fingers.....	15	9	19	2
Loss of toes.....	4	1	4	.....
Fractured skull.....	.....	.....	.....	.....
Fractured leg.....	1	.....	2	.....
Fractured arm.....	1	1	6	1
Fractured collar bone or ribs.....	7	4	7	1
Fractured other bones.....	7	1	10	1
Contusion of head or body.....	38	27	63	2
Contusion or laceration of feet.....	25	15	37	.....
Contusion or laceration of toes.....	6	2	10	.....
Contusion or laceration of legs.....	13	7	25	.....
Contusion or laceration of arms.....	21	6	24	2
Contusion or laceration of hands.....	47	29	64	6
Contusion or laceration of fingers.....	95	60	145	4
Dislocation.....	1	.....	.....	1
Internal injuries.....	.....	1	6	.....
Sprains.....	6	2	8	1
Shock.....	.....	.....	.....	.....
Miscellaneous.....	1	2	2	.....
Total injuries.....	295	174	451	22
Killed.....	82	12	33	4
Total killed and injured.....	327	186	484	26

RECAPITULATION.

Total killed.....	81
Total injured.....	942
Total killed and injured.....	1,023

TABLE NO. 4.—*Details of Table No. 1.—Causes of accidents to employees classified (16 and 17) as falling from and getting on or off cars and engines.*

Sub- class.	Causes.	Train- men.		Train- men in yards.		Yard trainmen (switch- ing crews).		Other em- ployees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	2	10	.....	3	.....	13	.....	3
	2 Ice or snow.....	.....	.....	.....	.....	.....	.....	.....	2
	3 Parting of train.....	1	8	1	1	3	3	.....	2
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	6	57	3	36	5	71	.....	10
	5 While setting brakes.....	1	29	2	28	2	50	.....	2
	Fell from—								
	6 Coal car.....	.....	8	1	3	.....	9	1	9
	7 Freight car other than box or coal car.....	7	49	2	21	2	17	2	25
	8 Engine or tender.....	13	128	7	60	4	32	2	15
C7	9 Passenger car.....	3	13	.....	1	2	1	1	12
	10 Engines, tenders, or cars (all kinds) not in motion.....	.....	61	.....	38	1	14	1	49
	11 Miscellaneous causes.....	11	256	4	182	8	201	2	65
	12 Not clearly explained.....	25	70	2	39	5	45	2	15
	13 Slipped getting on moving trains or cars.....	6	134	3	46	3	65	10	71
	14 Jumping off moving trains.....	3	133	1	60	.....	114	7	61
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	1	53	.....	8	.....	13	.....	7
	16 Fell from engines or cars by reason of defective handholds and sill steps.....	.....	37	.....	22	.....	40	.....	5
	17 Getting on or off moving engine.....	5	195	4	55	6	108	5	46
	18 Caught in frog, guard rail, or switch.....	.....	4	.....	4	1	4	.....	.....
	Total.....	84	1,240	30	587	42	800	33	399

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 17 records one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring at 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals, and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches and a collision which was due to failure of "controlled manual" block signal working.

Bulletin No. 18 shows total casualties much larger than in the preceding quarters, due largely no doubt to an enormous increase in traffic. Many accidents are reported in which the men had been on duty excessively long hours. One collision, killing 17 persons, was due to the error of an engineman of five months' experience, who ran past five warning signals. Another collision, killing 10 persons, was due to the failure of the men in charge of a freight train to identify opposing passenger trains. One derailment of a passenger train, killing 13 persons, was reported as due to some cause that could not be discovered.

Bulletin No. 19 is like Bulletin 18 in showing a large number of casualties. One butting collision, due to failure of train dispatching, caused 34 deaths and 24 injuries and \$50,000 damages, besides the damages for deaths and injuries of persons. One collision was due to the negligence of men who had been worked flagrantly long hours. Particulars are given of a number of collisions due to complicated and unusual causes.

Bulletin No. 20 shows total deaths greater than in the corresponding quarter of the previous year, but the number of passengers and employees killed in train accidents was considerably smaller. The most serious accident in this bulletin was a butting collision of passenger trains, due to misinterpretation of a dispatcher's order by a pilot; 10 persons killed, 38 injured. One derailment, unexplained, train running slowly, caused 9 deaths and 18 injuries.

^a For notes on Bulletins 1 to 16, inclusive, see Bulletin No. 17 or No. 18.

ACCIDENT BULLETIN

No. 22

SHOWING

COLLISIONS AND DERAILMENTS

OF TRAINS AND

CASUALTIES TO PERSONS

DURING

OCTOBER, NOVEMBER, AND DECEMBER, 1906

INTERSTATE COMMERCE COMMISSION

WASHINGTON, D. C.

WASHINGTON

GOVERNMENT PRINTING OFFICE

1907

THE INTERSTATE COMMERCE COMMISSION.

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Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. CHARLES A. PROUTY, of Vermont.

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Hon. JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE
THREE MONTHS ENDING DECEMBER 31, 1906.

The number of persons killed in train accidents during the months of October, November, and December, 1906, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 474 and of injured 4,940. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 20,944 (1,430 killed and 19,514 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.^a

TABLE NO. 1.—Casualties to persons, October, November, and December, 1906.^{b c}

	Passengers (a and b).		Persons carried under agree- ment or contract (bb).		Total (a, b, and bb).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	113	1,457	6	173	119	1,630	122	824	32	211
Derailements	58	787	3	105	61	892	67	467	6	68
Miscellaneous train accidents, including locomotive-boiler explosions .....	.....	24	.....	2	.....	26	13	285	2	65
Total train accidents	171	2,268	9	280	180	2,548	202	1,576	40	344
Coupling or uncoupling .....	.....	.....	.....	.....	.....	.....	17	319	20	175
While doing other work about trains or while attending switches .....	.....	.....	.....	.....	.....	.....	27	2,150	10	773
Coming in contact with overhead bridges, structures at side of track, etc.	2	12	.....	6	2	18	24	200	6	72
Falling from cars or engines or while get- ting on or off	33	526	1	14	34	540	87	1,386	30	638
Other causes	15	504	3	59	18	563	42	197	31	106
Total (other than train accidents)	50	1,042	4	79	54	1,121	197	4,252	97	1,763
Total all classes	221	3,310	13	359	234	3,669	399	5,828	137	2,107

^aIn Table No. 1 the passengers have been divided into three classes. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight.

^bTable No. 1 is continued on next page.

^cAccidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

TABLE NO. 1.—*Casualties to persons, October, November, and December—Continued.*

	Yard train- men (switch- ing crews).		Other em- ployees.		Total em- ployees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions	20	146	15	149	189	1,330	308	2,960
Derailments	8	42	9	48	85	625	146	1,517
Miscellaneous train accidents, including locomotive-boiler explosions	2	47	3	40	20	437	20	463
Total train accidents	25	235	27	237	294	2,392	474	4,940
Coupling or uncoupling	40	556	7	33	84	1,083	84	1,083
While doing other work about trains or while attending switches.....	20	770	22	771	79	4,464	79	4,464
Coming in contact with overhead bridges, structures at side of track, etc.....	4	125	1	10	35	407	37	425
Falling from cars or engines or while get- ting on or off.....	71	925	41	331	229	3,280	263	3,820
Other causes	32	133	370	3,784	475	4,219	493	4,782
Total (other than train accidents).....	167	2,509	441	4,929	902	13,453	956	14,574
Total, all classes	192	2,744	468	5,166	1,196	15,845	1,430	19,514

The totals of collisions and derailments and of deaths and injuries caused by them continue very large. The general cause of the increase over former periods, so far as it is possible to speak definitely on the subject, has been repeatedly stated in these bulletins, and need not be given here. The specific causes of the more prominent accidents are given below, in connection with Table 2a as usual. The number of passengers killed in train accidents in this quarter, 180, is the largest on record except that for the quarter ending September 30, 1904 (Bulletin No. 13), when it was 228. Bulletin No. 10 contained the next highest record. The totals under this head, in this and the 12 bulletins last preceding, are as follows:

PASSENGERS KILLED IN TRAIN ACCIDENTS.

Bulletin No.	Quarter ending with—	Killed.
22	December, 1906.....	180
21	September, 1906	52
20	June, 1906	27
19	March, 1906.....	62
18	December, 1905.....	50
17	September, 1905	43
16	June, 1905	41
15	March, 1905.....	28
14	December, 1904.....	53
13	September, 1904	228
12	June, 1904	23
11	March, 1904.....	40
10	December, 1903.....	^a 147

^a Three times the average of the nine preceding quarters.

The five principal accidents in Bulletin No. 13, with the number of persons killed in each, were: A bridge disaster in Colorado, 88; a butting collision in Tennessee, 63; a derailment at a misplaced switch in Illinois, 24; a collision in Illinois, 18, and a collision in New Jersey, 16.

Bulletin No. 10 includes a derailment in Pennsylvania, due to an accidental obstruction, 65 killed; a collision in Louisiana, 32; a collision in Michigan, 18, and one in Indiana, 16. Besides these disasters to passenger trains, there were in that quarter two collisions of work trains, killing 17 and 16 employees, respectively.

The other principal items in the present bulletin, compared with the last preceding quarter and with the quarter one year ago, appear as follows:

	Bulletin 22.	Bulletin 21.	Bulletin 18.
1. Passengers killed in train accidents.....	180	52	50
2. Passengers killed, all causes.....	234	110	101
3. Employees killed in train accidents.....	294	215	320
4. Employees killed in coupling.....	84	81	85
5. Total passengers and employees killed, all causes.....	1,430	1,182	1,109

Of the 180 fatalities in this quarter, as shown above, 143 are attributable to 3 accidents—collisions No. 23 and No. 28 (Table 2*a* following) and derailment No. 10.

The total number of collisions and derailments was 3,965 (2,226 collisions and 1,739 derailments), of which 391 collisions and 190 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$3,099,228. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments, October, November, and December, 1906.*

	Number.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	588	\$627,125	113	907
Collisions, butting.....	297	500,011	128	1,089
Collisions, trains separating.....	174	50,210	4	85
Collisions, miscellaneous.....	1,167	539,533	63	879
Total.....	2,226	1,716,879	308	2,960
Derailments due to defects of roadway, etc.....	341	250,231	8	648
Derailments due to defects of equipment.....	771	569,550	20	167
Derailments due to negligence of train men, signalmen, etc.....	147	119,809	69	192
Derailments due to unforeseen obstruction of track, etc....	68	72,626	13	66
Derailments due to malicious obstruction of track, etc....	14	17,113	1	82
Derailments due to miscellaneous causes.....	398	353,020	35	412
Total.....	1,739	1,382,349	146	1,517
Total collisions and derailments.....	3,965	3,099,228	454	4,477

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE 2a.—Causes of forty prominent train accidents (Class A).

[NOTE.—R. stands for rear collision, B., butting collision, M., miscellaneous collisions; D., derailment, P., passenger train; F., freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.			Reference to record.	Cause.
1	R	P. and F.....	1	10	\$2,300	55	Freight train, stopped by automatic block signal, run into at rear by passenger train, which had overrun automatic disk block signal, the face of which was partly covered by snow. Engineman appears to have taken chances.
2	B	F. and F.....	1	5	2,500	85	Operator wrote "95" for "75" in telegraphic order.
3	R	F. and F.....	0	0	3,000	87	Block signalman B authorized A to clear signal when block was occupied. Engineman approached station in fog with speed not under proper control.
4	B	F. and F.....	0	0	3,192	10	Signalman gave false clear block signal to west-bound train; operator failed to deliver order to east-bound train. One of these men in service 18 days, the other 8 months.
5	B	F. and P.....	1	11	4,000	45	Two empty engines, coupled together, encroached on time of regular passenger train. Second engine-man depended on the first, the first misread time by watch.
6	R	F. and P.....	2	26	4,475	79	Freight train approached station in fog with speed not under proper control.
7	B	P. and F.....	2	33	6,900	9	Operator omitted word "second" from order; operator in service 6 weeks.
8	R	P. and F.....	0	3	7,600	6	Signalman (1 a. m.) gave false clear block signal; flagman failed to go back, though instructed by locomotive whistle signal to do so. Signalman, 34 years of age, in service 8 days.
9	B	F. and F.....	5	1	7,600	19	Men in charge of eastbound train overlooked meeting point.
10	B	P. and F.....	3	24	8,500	13	Freight approached meeting point with speed not under proper control; conductor and engineman appear to have passed a switch without knowing it.
11	M	P. and F.....	2	24	9,056	62	Switch wrong; believed to have been maliciously misplaced.
12	B	F. and F.....	1	1	9,400	56	Operator omitted "2d No. 155" from order, though he repeated it to dispatcher correctly; operator in service 39 days.
13	M	F. and F.....	0	0	10,300	72	Freight train without engine left standing on grade with no hand brakes set, ran back down grade.
14	B	F. and F.....	4	3	10,968	16	Operator failed to deliver meeting order; operator decamped.
15	B	P. and F.....	3	7	12,320	14	Eastbound freight encroached on time of westbound passenger; engineman killed, conductor evidently reckless.
16	B	P. and P.....	1	49	12,500	1	Engineman's watch wrong; see note in text below.
17	R	F. and F.....	0	2	12,653	48	Failure to flag, and excessive speed.
18	B	F. and F.....	0	3	13,000	80	Operator fell asleep and failed to deliver meeting order, on duty 24 hours; his superior ignorant of this.
19	B	F. and F.....	4	3	13,200	76	Conductor and engineman of extra train made mistake of one hour in reading time-table. Engineman, 18 months in service, was killed, conductor 6 months in service.
20	B	P. and F.....	1	13	14,000	91	Dispatcher sent order reading "No. 50." Order delivered reading "No. 52." Impossible to decide whether error is chargeable to dispatcher or to the receiving operator.
21	B	F. and F.....	3	3	14,543	17	Operator, holding three orders for tra'n, delivered only two.
22	B	P. and F.....	9	66	15,000	74	Passenger train (1 a. m.) collided with switching freight train at entrance of yard. See note in text below.
23	R	P. and F.....	43	63	16,000	83	See note in text below.

TABLE 2a.—Causes of forty prominent train accidents (Class A)—Continued.

COLLISIONS—Continued.

No.			Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
24	B	P and P.....	2	5	15,763	37	Northbound extra train overlooked order to clear the track for southbound extra train; no explanation of forgetfulness.
25	R	P and P.....	5	20	20,400	2	Extra passenger train ran into regular passenger train standing at station. See note in text below.
26	R	P and F.....	1	9	21,900	73	Passenger train ran past automatic block signal and flagman; engineman killed. He made no effort to stop, and it is believed he had in some way been incapacitated before the collision.
27	B	P and F.....	0	6	25,520	89	Misplaced switch at entrance of passing track. Wreck destroyed by fire, which appears to have started in a car of oil.
28	B	P and P.....	43	155	37,000	40	See note in text below.
29	R	F and F.....	0	11	34,000	114a	Rear collision of freights due to false clear block signal and nonobservance of yard speed limit. Passenger train on adjacent main track wrecked because not time to warn it. Wreck burned by fire from caboose stove.
30	B	P and F.....	7	8	55,615	58	False clear block signal. See note in text below.
Total			144	564	427,605		

DERAILMENTS.

1	D	P.....	0	0	\$4,994	28	Careless running on descending grade; conductor and engineman on duty 23 hours.
2	D	P.....	2	14	5,700	64	Angle bar broken by shortening of rails due to cold weather; speed 55 miles an hour.
3	D	P.....	0	22	7,500	66	Unexplained. Speed 55 miles an hour.
4	D	P.....	0	49	7,700	35	Broken rail, speed 60 miles an hour. Rail had excess of phosphorus and manganese.
5	D	P.....	0	45	9,148	34	Unexplained. Speed 60 miles an hour.
6	D	F.....	0	0	10,000	29	Drawbar pulled out.
7	D	F.....	0	0	10,200	109	Unexplained. Fourteen cars fell through trestle, wreck took fire, probably from heated journal.
8	D	P.....	0	10	15,728	32	Low joint; sudden application of brakes; speed 25 miles an hour. Section foreman dismissed.
9	D	F.....	1	6	16,000	71	Runaway on steep grade; mismanagement of air brakes.
10	D	P.....	57	36	20,000	36	Rail out of place at entrance of drawbridge. See note in text below.
Total derailments ..			60	182	106,968		
Total collisions and derailments			204	746	534,573		

Collision No. 23, causing the death of 43 passengers and the injury of 63, occurred at Terra Cotta, D. C., on the Baltimore & Ohio Railroad, on the night of December 30, 1906, between 6.30 and 7 o'clock. The night was dark and a dense fog prevailed. The leading train, No. 66, had just stopped at the station when it was run into at the rear by a following extra train, consisting of an engine and eight empty passenger cars, and its rear car was completely wrecked. The circumstances of this collision are under investigation, and the Commission intends to issue a special bulletin containing a summary of the facts and its conclusions therefrom.

Collision No. 28, resulting in the death of 43 passengers and 1 train man, and the injury of 150 passengers and 5 train men, was between a

westbound passenger train and an eastbound freight. It occurred about 3 o'clock in the morning during a blinding snowstorm. The engines were wrecked and took fire, and 5 passenger cars, 1 baggage car, and 3 freight cars were burned up. The bodies of the passengers who were killed, except 2, were consumed in the fire. The passenger train was No. 47, second section. The first section of the passenger train carried green flags to indicate to freight trains running in the opposite direction that they must keep out of the way of the second section, but the freight in this case did not get, or did not heed, the signals, and started out from a side track, where it had been waiting, immediately after the passage of the first section. The signal lights fixed on the passenger engine close to the signal flags were not burning, and therefore the men in charge of the freight had no visual notice that there would be a second section of the passenger train.

To provide against the failure of lights in such cases the engineman of the passenger train is required to sound a whistle signal at the point where he meets a freight train. In this case the engineman says that he sounded the whistle, indicating that he was carrying green signals, and the men in charge of the freight admit that they heard a whistle signal, but thought it sounded like a crossing signal. The signal which should have been given consists of one long blast and two short blasts, while that for a highway crossing consists of two long and two short blasts. Whatever may have been the character of this signal, the engineman of the freight, if he understood it to be a notice of a second section, should have acknowledged it by sounding the whistle of his engine. He did not sound this signal. This being so, it was the duty of the engineman of the passenger train, under the rule, to stop and give the proper notice to the freight train by word of mouth. This was not done, and the passenger engineman can give no excuse for his failure to do so. This engineman is reported as having a clear record for the five years preceding the accident. As to the extinguishment of his signal lights, he says that they were burning when he left a station about 30 miles east of the point of collision. The snow was falling rapidly at the time and the wind was blowing a gale, and he appears to have allowed the lamps to go out without paying attention to the fact. This engineman had been in the service of the road sixteen years, and had been on duty two hours and thirty minutes, after a sufficient time for rest.

Derailment No. 10 was due to an unexplained fault in a drawbridge. The train, south bound, was made up of three cars, propelled by electricity, the leading car being the motor car. It was running at ordinary speed, probably 30 to 40 miles an hour. At the entrance of the drawbridge the leading car jumped the track and, after running a short distance on the ties, the leading truck of the car rode over the guard timber at the outer edge of the bridge floor, and the car, with

the two following it, fell into the stream below. Of the passengers in the cars 56, with the motorman—57 persons in all—were drowned, and 36 passengers were injured. The drawbridge is of the “turntable” style, turning on a vertical axis. It had been opened for the passage of a vessel a short time before. Preparatory to opening, the rails of the track at the end of the draw, which extend over a few inches onto the fixed span adjoining, had been lifted so as to clear the fixed rails during the movement of the bridge. When the bridge was returned to its normal position for the movement of trains the supports under these lifted rails were withdrawn, and the rails should have dropped into place by gravity. For some reason, not explained, one or both of the rails of the south-bound track did not thus drop, though the bridge itself was locked in position; and this caused the derailment. The attendant in charge had failed to notice the fault, although he stepped to a point within a few feet of the end of the draw to take up a red flag which, according to the regulations, he had displayed on the fixed span as an auxiliary stop signal while the draw was open. Not seeing the misplaced rail, he took up the flag and notified the signalman in the cabin south of the draw that the fixed semaphore signals might be cleared for trains. These fixed signals were interlocked with the bridge, but not with the track rails, and therefore there was nothing to prevent the giving of the clear signal to this train, notwithstanding the imperfection in the track.

The attendant at the bridge who thus wrongfully authorized a clear signal was 65 years old, a man of experience in positions of this kind, and with a good previous record.

Collision No. 16 was between passenger train No. 601, westbound, and passenger train No. 10, eastbound, between the switches at the station where they were ordered to meet. The eastbound train had the right to the track and the westbound encroached on its time in consequence of the engineman's watch being slow. It is the conclusion of the superintendent that the engineman had allowed his watch to run down. The westbound train should have entered the side track east of the point of collision, and for this the conductor, as well as the engineman, is held responsible.

Collision No. 22 occurred in the middle of the night and was due to the neglect of a flagman to give a warning signal a sufficient distance from his train. The passenger train was approaching a station at full speed and ran into a freight train switching on the main track. The flagman of the freight had been instructed to go out 2 miles, but he only went about 1,500 feet, and then stopped on a curve where the engineman of the approaching passenger train could see him for only a very short distance before reaching him.

Collision No. 25 was due to a combination of high speed and an insufficient time interval between trains carrying passengers. A regu-

lar west-bound passenger train standing at a station was run into by a following extra passenger train carrying troops and horses, and consisting of 18 live-stock cars, 9 sleeping cars, and a caboose. This train had left the last preceding station about four minutes behind the regular train, and was run at high speed (about 60 miles an hour or faster over a line where the grade was descending at 40 feet per mile)—so high that on approaching the station the engineman was unable to obey the stop signal given by the flagman of the train standing at the station, who had gone back about 1,400 feet and who was in a position where the engineman of the troop train could see the flag in time to have a space of about 2,000 feet in which to stop. He was unable to do this, and his engine struck the standing train while running at about 20 miles an hour. This engineman was held responsible for the collision, and the conductor of the train also for permitting the excessive speed. Both of these men, as well as those in charge of the regular train, were also held blameworthy for not complying with the rules regarding despatcher's orders, the regular train having passed the extra train without authority when the men of both trains held orders under which the extra train should have kept ahead. Of the 28 cars in the extra train 24 were air braked.

Collision No. 30 occurred about 6.15 a. m. on a line worked by the telegraph block system. Southbound passenger train No. 33 of the Southern Railway left Rangoon, Va., at 6.06 a. m., and after running about 1½ miles was stopped by the automatic application of the air brakes, caused by the parting of the train, the parting being due to the failure of the drawbar of an express car in which the coupler was defective. About three or four minutes after the train had come to a stop it was run into at the rear by a following passenger train, No. 37, and the rear car of the standing train was crushed, 7 persons in it being killed. Eight persons on the train were injured. Train No. 37 had passed Rangoon at 6.14 a. m., the signalman at that point giving it a clear block signal. This signalman, 22 years of age, and in the service of the company two and one-half years, asserts that the signalman at Lawyers, the south end of the block section, had reported the passage of No. 33. The signalman at Lawyers denies this, and his records, on which no entry was made for No. 33, bear out his statement. The flagman of train No. 33 had gone back between 300 and 400 yards to warn the following train, but the line of the road at this point is descending about 60 feet to the mile, the train was running at high speed, and the flag signal was unavailing. This collision, like No. 23, may be made the subject of a special report.

TABLE NO. 3.—*Details of Table 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot		14		9		35		2
2	Adjusting coupler, cars accidentally started.....	2	6		6	2	10	1	1
3	Careless manipulation of uncoupling lever.....		6		2		13		
4	Cars not equipped with automatic coupler.....		3		1		2		5
5	Coupler broken, using link and pin, or chain.....	1	10		4	1	6		1
6	Coupling damaged cars	1	12		10	4	29		2
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		4		4		9	1	3
8	Coupling with chain or other emergency appliance because of uneven track		1						
9	Coupling or uncoupling safety chains		3	1			11		
10	Fingers or hand caught between uncoupling lever and body of car.....		66		37		97		3
11	Uncoupling without using lever (unnecessary).....	1	8		6		8		
12	Uncoupling without using lever, uncoupling lever not in working order.....		42	1	24	5	94		2
13	Foot caught in frog, switch, or guard rail			1	2	3	8		1
14	Opening or closing knuckle when cars were near together, miscalculated speed	3	34	2	14	3	48	1	4
15	Opening knuckle when cars were near together, engine accidentally started		5		2	1	6		1
16	Opening knuckle, part of defective coupler fell on foot.....		5		3		13		
17	Opening knuckle, lost footing	1	10	4	8	1	14		
18	Riding on car to uncouple, slipped of	1	5		5	3	16		
19	Struck by object at side of track.....		8		2	2	17		2
20	Caught by unexpected movement of car, due to slack running in	2	24	2	11		23		1
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....		8	2	3	1	5		1
22	Uncoupling moving cars and lost footing	1	7	1	4	4	25		
23	Parts hard to move, causing delay		4		5		8		
24	Went between cars unnecessarily and contrary to rule.....	1	14		7	1	22	2	1
25	Hand caught between projecting load and end of next car		6		2		4		
26	No witness (fatal injury)	2		5		9		2	
27	Other causes (see detailed list below).....	1	7		1		17		3
28	Unexplained		7	1	3		16		
Total		17	319	20	175	40	556	7	33

Details of injuries included in Table No. 3, subclass 27.

- O. 1. Scalded by hot water from engine.
O. 2. Glove caught on lever and threw man on track.
O. 3. Stepped on nail in board and punctured foot.
O. 4. Door fell off car on arm.
O. 5. Torpedo exploded, cutting leg.
O. 6. Uncoupling; caught hand on nail.
O. 7. Caught foot between ties, spraining ankle.
O. 8. Stepped on lump of coal, injuring foot.
N. 1. Adjusting coupler, struck with pin by fellow-employee.
N. 2. Coat caught on coupler, throwing man under car.
N. 3. Hatch of ice tank fell on head.
N. 4. Car ran over scantling, which flew, striking man on legs, knocking him down.
N. 5. Board fell from top of car on hand.
N. 6. Air hose burst, striking leg.
N. 7. Hand slipped off ice-covered lever and struck corner of car.
N. 8. Leg cut by piece of exploding torpedo.
N. 9. Apron of car fell down, cutting lip.
N. 10. Caught between lever and car sill; squeezed about stomach.

- N. 11. Scalded by hot water from injector.
- N. 12. Piece of coal fell off tank on foot.
- D. 1. Lever on car struck face.
- D. 2. Stepped on piece of coal, spraining ankle.
- D. 3. Coat sleeve caught on lifting lever.
- D. 4. Standing on gondola with foot inside, load shifted, crushing foot.
- D. 5. Caught foot in rope on ground, spraining ankle.
- D. 6. Stepped on nail in board.
- D. 7. Lump of coal fell off car on foot.
- D. 8. Cutting off car, struck on head by pole of poling car.
- D. 9. Had hand on end gate of car loaded with steel, load shifted, mashing fingers.

TABLE NO. 3A.—*Details of Table 1—Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other em- ployees.
Loss of feet.....	2	3	6	.....
Loss of legs.....	1	1	3	.....
Loss of arms .....	.....	2	5	1
Loss of hands .....	.....	3	1	.....
Loss of fingers.....	19	5	23	.....
Loss of toes.....	2	.....	2	.....
Fractured skull	1	.....	1	.....
Fractured leg	4	1	5	.....
Fractured arm	5	2	8	.....
Fractured collar bone or ribs.....	10	2	10	.....
Fractured, other bones.....	10	5	15	.....
Contusion of head or body.....	43	25	83	8
Contusion or laceration of feet.....	17	13	46	2
Contusion or laceration of toes.....	9	4	12	.....
Contusion or laceration of legs.....	14	8	31	2
Contusion or laceration of arms.....	27	6	47	3
Contusion or laceration of hands	43	30	67	1
Contusion or laceration of fingers.....	100	56	159	8
Dislocation.....	3	1	1	.....
Internal injuries	3	2	10	3
Sprains.....	2	3	21	2
Miscellaneous.....	1	3	6	3
Total injuries	819	175	556	33
Killed	17	20	40	7
Total killed and injured.....	336	195	596	40

RECAPITULATION.

Killed	84
Injured	1,083
Total killed and injured.....	1,167

TABLE NO. 4.—*Details of Table 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car	1	6	....	4	1	8	....	2
	2 Ice or snow .....	....	10	1	8	....	6	....	3
	3 Parting of train	1	9	....	9	....	9	....	....
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 8	8	52	3	31	5	90	4	6
	5 While setting brakes	4	41	1	30	5	57	....	5
	Fell from—								
	6 Coal car .....	....	11	....	4	3	12	2	5
	7 Freight car other than box or coal car	8	45	....	11	....	12	4	16
	8 Engine or tender	10	147	4	60	10	51	4	16
C7	9 Passenger car .....	....	8	....	4	2	....	....	3
	10 Engines, tenders, or cars (all kinds) not in motion .....	....	83	....	46	....	25	1	39
	11 Miscellaneous causes	10	280	3	121	9	208	7	68
	12 Not clearly explained	20	55	6	23	13	46	3	16
	13 Slipped getting on moving trains or cars	12	136	2	56	7	58	5	46
	14 Jumping off moving trains	8	163	1	81	4	107	5	53
	15 Jumping from engines or cars anticipating collision, derailment, or other accident	3	70	....	11	....	12	....	8
	16 Fell from engines or cars by reason of defective handholds and sill steps .....	....	39	1	22	....	48	....	4
	17 Getting on or off moving engine	7	224	7	112	12	161	6	40
	18 Caught in frog, guard rail, or switch .....	....	7	1	5	....	15	....	1
	Total	87	1,386	30	638	71	925	41	331

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 17 records one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring at 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals, and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches and a collision which was due to failure of "controlled manual" block signal working.

Bulletin No. 18 shows total casualties much larger than in the preceding quarters, due largely no doubt to an enormous increase in traffic. Many accidents are reported in which the men had been on duty excessively long hours. One collision, killing 17 persons, was due to the error of an engineman of five months' experience, who ran past five warning signals. Another collision, killing 10 persons, was due to the failure of the men in charge of a freight train to identify opposing passenger trains. One derailment of a passenger train, killing 13 persons, was reported as due to some cause that could not be discovered.

Bulletin No. 19 is like Bulletin 18 in showing a large number of casualties. One butting collision, due to failure of train dispatching, caused 34 deaths and 24 injuries and \$50,000 damages, besides the damages for deaths and injuries of persons. One collision was due to the negligence of men who had been worked flagrantly long hours. Particulars are given of a number of collisions due to complicated and unusual causes.

Bulletin No. 20 shows total deaths greater than in the corresponding quarter of the previous year, but the number of passengers and employees killed in train accidents was considerably smaller. The most serious accident in this bulletin was a butting collision of passenger trains, due to misinterpretation of a dispatcher's order by a pilot; 10 persons killed, 38 injured. One derailment, unexplained, train running slowly, caused 9 deaths and 18 injuries.

Bulletin No. 21 contains the record of only one train accident—a collision—in which more than 10 persons were killed, but the totals of casualties of all classes are large, no improvement being shown over preceding quarters. Number of passengers killed in train accidents, 52. One collision, killing 17 and injuring 56, was due to confusion of telegraphic orders; one derailment, killing 9 and injuring 43, was at a misplaced switch, and another, killing 7 and injuring 40, was due to excessive speed.

^a For notes on Bulletins 1 to 16, inclusive, see Bulletin No. 17.

DEC 16 1907

U.S., Interstate Commerce Commission
Washington, D. C.

Accident Bulletin

No. 23

January, February, and March
1907



Washington
Government Printing Office
1907

Property of the United States Government.

ACCIDENT BULLETIN NO. 23

Showing

Collisions and Derailments of Trains

and

Casualties to Persons

during the months of

January, February, and March, 1907

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



THE INTERSTATE COMMERCE COMMISSION.

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Hon. JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING MARCH 31, 1907.

The number of persons killed in train accidents during the months of January, February, and March, 1907, as shown in reports made by the railroad companies to the Interstate Commerce Commission under the "accident law" of March 3, 1901, was 421, and of injured 4,920. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 20,563 (1,293 killed and 19,270 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty:^a

TABLE No. 1.—Summary of casualties to persons, January, February, March, 1907.^{b c}

	Passengers (a and b).		Persons carried under agree- ment or contract (bb).		Total (a, b, and bb).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	46	1,189	6	160	52	1,349	116	786	14	247
Derailments.....	51	928	7	122	58	1,050	68	483	2	36
Miscellaneous train accidents, including locomotive-boiler explosions.....	15	66	1	9	16	75	41	242	1	57
Total train accidents.....	112	2,183	14	291	126	2,474	225	1,511	17	340
Coupling or uncoupling.....							19	256	12	190
While doing other work about trains or while attending switches.....							20	2,135	8	845
Coming in contact with overhead bridges, structures at side of track, etc.....	2	2	.....	2	2	4	15	185	3	86
Falling from cars or engines or while get- ting on or off.....	31	414	3	18	34	432	82	1,288	25	665
Other causes.....	12	355	10	71	22	426	54	217	32	105
Total (other than train accidents).....	45	771	13	91	58	862	190	4,081	80	1,891
Total all classes.....	157	2,954	27	382	184	3,336	415	5,592	97	2,231

^a In Table No. 1 the passengers have been divided into three classes. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight.

^b Table No. 1 is continued on next page.

^c Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

TABLE NO. 1.—*Summary of casualties to persons, January, February, March, 1907—*
Continued.

	Yard train- men (switch- ing crews).		Other em- ployees.		Total em- ployees.		Total all per- sons.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	12	150	21	248	163	1,431	215	2,780
Derailments.....	5	46	7	64	82	629	140	1,679
Miscellaneous train accidents, including locomotive-boiler explosions.....	3	47	5	40	50	386	66	461
Total train accidents.....	20	243	33	352	295	2,446	421	4,920
Coupling or uncoupling.....	26	473	5	28	62	947	62	947
While doing other work about trains or while attending switches.....	20	868	30	710	78	4,558	78	4,558
Coming in contact with overhead bridges, structures at side of track, etc.....	6	120	2	16	26	407	28	411
Falling from cars or engines or while get- ting on or off.....	37	914	32	353	176	3,220	210	3,652
Other causes.....	35	133	351	8,901	472	4,356	494	4,782
Total (other than train accidents).....	124	2,508	420	5,008	814	13,488	872	14,350
Total, all classes.....	144	2,751	453	5,360	1,109	15,934	1,293	19,270

The number of employees killed in coupling accidents in this quarter shows a diminution of 25 per cent as compared with the quarter last preceding or with that of one year ago. This is a gratifying indication of an improvement in safety appliances, which it is to be hoped will be maintained. The other principal items in the present record show no important changes as compared with the last preceding quarter, which was marked by large aggregates of both killed and injured. The number of passengers now reported killed in train accidents (126) is, indeed, 30 per cent smaller; but the record includes two collisions (Table 2a, Nos. 30 and 31) killing 41 persons and two derailments (Nos. 1 and 18) killing 41; and the total of 126 is more than twice the total of this quarter in 1906.

The principal items in the present bulletin, compared with the last preceding quarter and with the quarter one year ago, appear as follows:

	Bulletin 23.	Bulletin 22.	Bulletin 19.
1. Passengers killed in train accidents.....	126	180	62
2. Passengers killed, all causes.....	184	234	114
3. Employees killed in train accidents.....	295	294	212
4. Employees killed in coupling.....	62	84	84
5. Total passengers and employees killed, all causes.....	1,293	1,430	1,126

The total number of collisions and derailments in the quarter now under review was 3,991 (2,078 collisions and 1,913 derailments), of which 323 collisions and 229 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents

amounted to \$3,536,110. Given more in detail, these facts appear as below:

TABLE No. 2.—*Collisions and derailments, January, February, and March, 1907.*

	Number.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	538	\$499,565	50	586
Collisions, butting.....	279	630,518	93	1,101
Collisions, trains separating.....	194	52,977	2	110
Collisions, miscellaneous.....	1,067	652,199	70	983
Total.....	2,078	1,835,259	215	2,780
Derailments due to defects of roadway, etc.....	427	339,268	23	323
Derailments due to defects of equipment.....	771	619,604	5	259
Derailments due to negligence of trainmen, signalmen, etc.....	122	73,673	32	227
Derailments due to unforeseen obstruction of track, etc.....	135	182,645	22	210
Derailments due to malicious obstruction of track, etc.....	16	42,177	5	79
Derailments due to miscellaneous causes.....	442	443,484	53	581
Total.....	1,913	1,700,851	140	1,679
Total collisions and derailments.....	3,991	3,536,110	355	4,459

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE 2a.—*Causes of fifty-one prominent train accidents (Class A).*

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	M	F. and F.....	7	20	\$800	34	Employees killed and injured in a caboose, being pushed on yard track; butting collision; both trains disregarded yard speed limit.
2	M	F. and F.....	0	1	1,250	64	Freight train moving from side track to main track at night struck by following freight. Markers had not been turned from green to red, and brakeman had turned switch without looking at electric indicator connected with automatic block signal.
3	B	F. and P.....	0	2	3,000	98	Empty engine started from interlocking station on wrong main track; intended to run through crossover and signalman had cleared the signal, but did not throw crossover switch. Signal has but one arm, which is cleared for either of the two routes. Engineman on duty 17 hours.
4	M	P. and F.....	0	1	3,200	67	Switch out of order; signalman gave clear hand signal, assuming, erroneously, that switch had been spiked by repair man.
5	B	F and F.....	0	7	4,118	19	Illegible train order; order written 3d 73; taken to read 2d 73; operator failed to check order when it was read aloud in his presence; dispatcher caused unnecessary confusion by putting two orders in one.
6	B	F. and F.....	0	1	4,582	33	Engineman misread dispatcher's order. (See note in text below.)
7	B	P. and P.....	1	18	4,700	23	Engineman misread name of station in dispatcher's order; order legibly written; conductor had not properly delivered order to engineman; gave order to brakeman; brakeman gave it to fireman and he to the two enginemen of the two engines.

TABLE 2a.—Causes of fifty-one prominent train accidents (Class A)—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
8	R	F. and F.....	2	2	5,250	16	Engineman ran past two automatic block signals set against him.
9	B	F. and F.....	0	0	5,970	5	Dispatcher sent order to 2d and 3d No. 50 when it should have been sent to 1st and 2d No. 50. (See note in text below.)
10	B	P. and F.....	1	26	6,262	101	Freight train backing into side track; rear part broke loose and ran back down grade into head of passenger train. Conductor set hand brakes but could not stop cars until too late. Air brakes had been bled because of the bursting of a hose.
11	B	P. and P.....	4	107	7,745	97	Regular eastbound passenger train ran past meeting point.
12	M	P. and F.....	1	42	8,000	4	Misplaced switch. Switch had been opened by man in charge of freight train, intending to enter main track thinking that the passenger train (No. 4) had passed. The train which had passed was No. 2.
13	B	F. and F.....	3	2	8,500	53	Conflicting train orders, 12.30 a. m. Dispatcher at fault was 39 years old, experienced in train and telegraph work, but had served only 1 night as dispatcher. He forgot an order which had been issued by the other dispatcher about an hour before. Had not receipted for this outstanding order.
14	M	P.....	0	6	9,567	29	Misplaced switch at station. Target of switch covered with snow.
15	R	P. and P.....	1	15	10,100	30	Approached station (8 p. m.), not under control; faulty flagging.
16	R	F. and F.....	2	5	11,000	21	Excessive speed, and failure of standing train to flag.
17	R	P. and P.....	0	11	11,025	9	False clear block signal. (See note in text below.)
18	B	F. and F.....	0	3	11,100	88	Eastbound ran past signal at meeting point at 4 miles an hour.
19	B	P. and F.....	0	11	11,170	31	Westbound passenger train disregarded wait order. (See note in text below.)
20	B	P. and F.....	2	12	11,300	63	Westbound extra freight (2 a. m.) neglected to head in at entrance to side track; engineman asleep.
21	R	P. and F.....	6	1	11,900	6	Freight followed passenger train from station (4 a. m.) within five-minute time limit and ran into passenger train unexpectedly stopped; weather very cold.
22	R	P. and F.....	0	16	12,000	55	Passenger train unexpectedly stopped (3 a. m.) run into at rear by freight. (See note in text below.)
23	M	P. and F.....	5	3	12,400	58	Extra freight entered main track in face of fast train, disregarding automatic indicator at switch. (See note in text below.)
24	B	P. and F.....	1	47	14,600	100	Eastbound freight backed into side track; neglected to set switch straight though westbound passenger train was then due. Engineman on passenger train, approaching at 50 miles an hour, had his attention diverted from switch by excited actions of freight train men.
25	M	P. and F.....	2	26	15,000	61	Freight on passing track fouled main track. (See note in text below.)
26	B	F. and F.....	1	3	15,933	59	Northbound train disregarded meeting order. The order said "meet engine 567." At the meeting point engine 565 was on the side track and this was taken for 567. The northbound train passed without stopping.
27	M	F. and F.....	1	1	18,844	18	Runaway on steep grade. Engineman continued using steam too long after passing summit.
28	M	P. and F.....	0	3	21,900	66	Passenger train disregarded distant and home automatic block signals; ran into side of freight train. Fireman had called clear signals to engineman without seeing signals; engineman also ignored rule requiring an all-right hand signal at this point.
29	B	F. and F.....	1	3	27,102	8	Runaway on grade. (See note in text below.)
30	B	F. and P.....	32	75	31,100	11	Operator failed to deliver order. (See note in text below.)
31	B	P. and F.....	9	8	48,500	10	Passenger train ran past block signal and freight disregarded time limit. (See note in text below.)
32	M	P. and F.....	0	15	73,625	27	Maliciously misplaced switch. Damage largely due to fire.
33	B	P. and F.....	5	11	75,300	1	Misplaced switch. (See note in text below.)
Total collisions.....			87	504	516,843		

TABLE 2a.—Causes of fifty-one prominent train accidents (Class A)—Continued.

DERAILMENTS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	D	P.....	19	149	\$2,600	79	Unexplained. (See note in text below.)
2	D	P.....	2	15	.....	106	Broken rail.
3	D	P.....	0	12	5,650	77	Derailing switch thrown under train by repairman testing interlocking apparatus.
4	D	P.....	0	2	6,500	78	Broken rail. One passenger car destroyed by fire, which started in oil lamps.
5	D	P.....	3	3	8,747	73	Engineman (who was killed), disregarding slow order, ran into side track at 50 miles an hour. Engineman thought to have been asleep. Fireman had spoken to him about excessive speed, but not with the necessary determination and energy.
6	D	F.....	1	0	9,350	76	Open draw.
7	D	P.....	2	49	10,500	121	Maliciously misplaced switch.
8	D	P.....	1	5	11,260	82	Broken rail.
9	D	P.....	6	11	15,119	38	Misplaced switch; occurred 4 a. m. No lamp on switch. (See note in text below.)
10	D	F.....	0	3	16,000	37	Runaway on 3 per cent grade; negligent management of brakes. Hand brakes were in use, power brakes alone being deemed unsatisfactory for so steep a grade.
11	D	F.....	1	1	16,750	117	Roadbed washed out at side by flood in river. Engineman is said to have been keeping good lookout and to have thought roadbed intact. Track inspected one hour before and traversed by a train 30 minutes before.
12	D	F.....	0	1	17,055	42	Unexplained.
13	D	P.....	3	35	18,700	47	Unexplained.
14	D	P.....	1	1	21,500	75	Switch out of order; rod maliciously loosened; switch new and in good condition 2 days before. Wreck mostly destroyed by fire, which started from heater in car or from lamps.
15	D	F.....	3	0	22,000	118	Middle pier of bridge gave way as train passed over; undermined by flood believed to have been caused by cloudburst. The dam caused by the wreck divided the stream in such a way as to destroy both abutments.
16	D	P.....	1	23	29,430	69	Unexplained. Believed some part of engine broke and fell to the ground. Speed 28 miles an hour.
17	D	P.....	0	44	60,000	81	Brake beam on rear truck of tender fell on track and derailed cars.
18	D	P.....	22	116	28,685	115	Misplaced switch. Engineman failed to keep good lookout and approached yard at too high speed. (See note in text below.)
Total derailments..			65	470	299,846		
Total collisions and derailments.....			152	974	816,689		

Collision No. 30, killing 32 persons and injuring 75, was caused by the mistake of a telegraph operator. Westbound passenger train No. 29, running from A to B, C and D, etc., had orders to meet eastbound passenger train No. 30 at C and eastbound train No. 14 at B. No. 29 train arrived at B and entered a side track opposite the station, and eastbound train No. 14 proceeded on its way. While No. 29 was on the side track, the operator was called upon by the dispatcher to take an order changing the meeting point with No. 30, making it B instead of C. According to his own statement, the operator, on receiving notice of this order to make a change, and while continuing to give his attention chiefly to the receiving of the message, went through the motion of striking the signal lever at his elbow so as to change it from the clear to the stop position, but he did not make

sure that the signal actually went to that position; and whatever he did or did not do to the lever, the signal was not caused to indicate stop. Before he had finished taking the message No. 29 backed out of the side track and proceeded westward along the main line past the station.

When the train passed his window the operator picked up his lantern and ran out in the attempt to stop it, though not so promptly as he otherwise would have done, because he thought that the train would stop for water a short distance west of the station, as was often or usually done. In giving the stop signal he swung his lantern so violently that the flame was soon extinguished. He then ran to the pump house near by and picked up the pumpman's lantern and tried to use it, but that also went out. He then ran back to the office and found that his signal was not in the stop position. The operator then decamped, first telling the dispatcher that he felt certain that a collision would occur, and that he was afraid of being mobbed. Train No. 29 went on, and a short distance west of the station collided with No. 30. The operator subsequently came back, or was brought back, and made a statement to the county attorney.

According to the rules the despatcher should not issue an order, as, for example, to a westbound train at B, requiring it to wait at B for an eastbound train of the same class, if avoidable. When unavoidable, an order may be thus issued if the superior train (the westbound) has already stopped or is scheduled to stop at that station, or has received a previous order to stop there; and provided the weather is clear and the line is sufficiently straight and level to give an approaching engineman ample time to bring his train to a stop before reaching the signal; and provided further, that in case of a passenger train two torpedoes have been placed on the rail by the operator. As No. 29 was already stopped at B, the despatcher is held by the superintendent blameless so far as this rule is concerned, though the operator, knowing the rule, should either have put down the torpedoes or else have called the conductor into the office before finally accepting the order. The operator had been in the service of the company only 5 days and at this station only 2 days (nights). He was 18 years of age, though in applying to the company for employment (and also to another company at the same time) he gave his age as 23 and averred that he had had several years' experience, when, in fact, he had worked as an operator only 18 months. The report says that his size and general appearance indicated a man much older than 18. The collision occurred about 4.25 a. m., and the operator had been on duty about 10 hours. He stated that he had been awake all night, and there is no evidence of anything like intoxication.

Collision No. 31, occurring about 2.14 a. m., killing 9 persons and injuring 8, was between an eastbound passenger train and a westbound freight, the freight being at the time partly in a side track, which it was entering. The passenger train ran past a block signal set against it at F, and the collision occurred a few rods east of the signal. The passenger train was running at high speed, although there was a dense fog at the time which made it impossible to see the signal light more than a few hundred feet; and the signal which was disregarded was on a post 40 feet high and 25 feet to the left of the track. The engineman chargeable with this neglect was a man of experience and his record was one of the best on the road. He asserted that the block signal indicated clear and that his speed was low—about 25 or 30 miles an hour; but these statements are both disproved by conclusive evidence to the contrary. The men in charge of the freight train are also held blameworthy in connection with this collision, as, notwithstanding the protection afforded to their movement by the block signal at F, the rule required that freights should in all cases be clear of the main track 5 minutes before the time for the arrival of any passenger train.

Collision No. 6, occurring about 2 a. m., was due to the engineman of a freight train misreading a dispatcher's order. He was running in the inferior direction and received an order making his train superior from A to C. Subsequently he received another order modifying this. This second order contained instructions concerning five meeting or waiting points and mentioned two trains besides his own. It contained four complete sentences. The engineman, in reading, ran the second and third sentences together and wrongfully assumed that two superior trains were to wait for him at a certain station, when the order in fact named only one of those trains as being required thus to wait. This second order was not delivered to the conductor of the train. It was on Form 19, not requiring signatures, and was delivered by the operator to a man on the engine of the train as it slowly passed his station, but it was not delivered to the conductor, who was on the rear end of the train, because neither the conductor nor the rear brakeman was in position on the step of the caboose to receive the order as the station was passed. The engineman, though having received his copy of the order, should not have continued on his journey beyond that station without a hand signal from the conductor to proceed. This he did not receive, the conductor and rear brakeman having ignored the stop signal.

Collision No. 9 was due to the error of a dispatcher in sending an order to the wrong train. He sent the order to station A and to station D, giving an extra westbound train right over the first and second sections of an eastbound regular train from A to D, but in

sending the order to D he addressed it to the conductor and engine-man of the second and third sections of the regular train. The first section had already left D and the dispatcher was aware of the fact. He seems to have assumed that the address of the order as sent to D corresponded with the statement in the body of the order, when in fact it did not correspond. The station operator who received the order at D did not discover the discrepancy, nor was it noticed by the operator at A.

Collision No. 17, occurring in the middle of the night, took place on a line worked by manual block signals, communication from cabin to cabin being by bell code. The signalman at A, 45 years old, and in the service of this company 8 months as signalman (and formerly as brakeman), appears to have given a clear signal to the second train when he was not certain of the information he had received from station B. He claims to have received "four bells," meaning "block clear," but the signalman at B claims that he sent five bells, meaning block not clear. The signalman at A appears to have been in doubt concerning the bell signal and yet he did not ask B to repeat it. Both signalmen are reported as of good habits and good records. A large part of the damage incident to this accident was caused by a fire which was started by coals from the fire box of the locomotive.

Collision No. 19 was due to negligence on the part of both the conductor and the engineman of a passenger train. They had received an order to wait at S until 8.45 a. m., but passed that station at about 8.38, although the order had been given to them only about 13 minutes before. The conductor entirely forgot the order and he was dismissed. The engineman had misread the order and thought that he had a right to go to another station farther on. As he was passing S the fireman looked at his watch and spoke to the engineman; but the engineman, in response to this, simply pulled the order out of his pocket and handed it to the fireman without looking at it, evidently having no doubt that his reading of the order had been correct. Before the fireman had time to finish reading the order the collision occurred. Both the conductor and engineman were men of long experience. They had been on duty about 3 hours.

Collision No. 22 was due to the inefficiency of the flagman of a passenger train. This flagman, 24 years of age, who had been in the service about 3 months, started out to flag the following train, but took neither torpedoes nor fusees. After going a short distance he returned to his train to get his overcoat, and before he could again go out a sufficient distance for his signal to be of any use the following train was upon him.

Collision No. 23, between a fast first-class train and a switching freight, was due to the carelessness of a brakeman of the freight train, who turned the switch from the main track to a siding without heeding the indication of the electric visual signal, which would

have warned him that the fast train was approaching. The line at this point is equipped with automatic track-circuit block signals, and the fast train had already passed the point at which it set the switch indicator when the switch was turned. This train occupied only about 1 minute and 36 seconds in running from the signal at the entrance of the block section to the misplaced switch, and when it came on, at full speed, the freight had just fouled the main track. The brakeman at fault had been in the service of the road about 14 months. The enginemen had told him particularly to look at the indicator before turning the switch. It is possible that he looked at the indicator, but allowed considerable time to elapse after looking before turning the switch, the fast train meantime passing the block signal showing clear. Another collision in this quarter (No. 2 in the table) was due to the neglect of a trainman to make proper use of an automatic indicator at a switch.

Collision No. 25 was due to inefficient management of brakes. The freight train, west bound, running slowly along a passing track while waiting for a passenger train moving in the same direction, was allowed to run a few feet too far at the end of the passing track and so fouled the main line. The passenger train, coming along just at that moment at full speed, struck the freight, and the passenger engine was overturned. The freight train consisted of 23 cars, but had air brakes in use on only 4 cars. The engineman asserted that he was ignorant of the fact that the other 19 cars had been disconnected. At a station about 4 miles back a nonair car had been put in the fore part of the train with the view of saving time at the next station, where that car was to be left. One of the brakemen claimed to have informed the engineman about the change in braking power.

Collision No. 29 was due to a freight train becoming uncontrollable on a steep grade about 2 a. m. The men in charge of the train were experienced, but appear to have exercised poor judgment. It is believed, though not proved, that an angle cock had been shut at the third car from the engine, so that the air brakes were not effective on that part of the train behind the third car, and for this misplacement of the cock the conductor and engineman are held responsible. Aside from this, however, these men had allowed the train to attain too high speed before taking action to check the speed, and, in addition to this, the brakeman at the rear of the train, who should have opened the conductor's brake valve when the engineman sounded the alarm whistle, neglected to do so.

Collision No. 33 was due to a misplaced switch and occurred about 9 p. m. A northbound passenger train, running at full speed, entered a siding and struck a southbound freight train which was standing there. Both engines were demolished and from their fire boxes the wreck took fire, 3 Pullman cars and 11 freight cars being

completely destroyed. The switch had been left wrong by an employee of another road, the side track being used in common by the two roads as a connecting track.

Derailment No. 1, killing 19 persons and injuring 149, is reported as "cause unknown," the railroad company stating that its investigation into the circumstances of the accident has not yet been completed. The train derailed consisted of five passenger cars, drawn by two electric motors. It was running at full speed on a curve of 3°, the outer rail of which was superelevated 4½ inches. Two cars were overturned. The track consisted of rails weighing 100 pounds to the yard, laid on 21 ties to each 33 feet, with tie plates. The ballast was stone and the whole track was well built and maintained. In the cab of the leading motor were four men, the engineer, his helper, an electrical inspector, and the assistant superintendent of the division. These men estimate the speed of the train at the time of the derailment at 45 to 50 miles an hour, which estimate is corroborated by the record at the last block signal station, compared with that at the power house, where note of the time was made when power was automatically shut off by the breaking of the third-rail electrical conductor at the moment when the cars jumped the track. The report of the railroad company further says that in making a test run some time after the accident, with a train made up like that which was wrecked and with all conditions similar, the speed proved to be 48 miles an hour at the point of the accident. A careful examination was made of the track and wreckage immediately after the derailment, but although indentations were found on wheels and rails, it was impossible to determine whether these marks had anything to do with the cause of the derailment, or were only effects.

Derailment No. 18 appears to have resulted from gross negligence on the part of a number of different persons. A passenger train approaching an important station at high speed was derailed at a misplaced switch. The train was run not only in disregard of a rule requiring trains to be run within the yard limits with speed under control, but also apparently with recklessness as regards the switch, which was misplaced and which caused the derailment; for it appears that the air brakes on the train which, according to all the available evidence, were in good order, had not been applied before the engine ran off the track. The engineman was fatally injured, dying eleven days after the accident, and he made no intelligible statement. The train consisted of an engine and 14 cars. Six of these cars were completely broken up, and three others were badly wrecked. Most of the passengers who were killed were riding in two ordinary cars, not vestibuled, which were the first two cars in the train, while the cars behind these were not only heavier but were, most of them, vestibuled. The train, running at from 50 to 65 miles an hour, ran over the misplaced switch

and entered the side track at such high speed that the engine was overturned at a point a few feet beyond the point where it left the main track. This switch was 1,585 feet within the yard limit. There was a good view of the switch from the approaching train. The engineman of the passenger train was an experienced employee of this road, but the men in charge of the switching engine, who had left the switch set in the wrong position and unattended, were comparatively new to their work. The foreman of the crew had been employed at this point only four weeks, though he had had railroad experience before. The switchman who was immediately responsible had worked in this yard about six weeks, but had had several years' experience in railroad work. The engineman and fireman of the switching engine had worked in this yard only three days.

Derailment No. 9, occurring about 4 a. m. and causing the death of 4 passengers and of the engineman and fireman, happened at a misplaced facing-point switch, the speed of the train at the time being about 35 miles an hour. The switch was found locked in position for the side track. It had been used by a freight train about 40 minutes before, but the question who was blameworthy for the misplacement has not been settled. The switch had no lamp, being a new one. The lamp had been received for it, and it was to have been put in position the next day. The engine was equipped with an electric headlight, by the aid of which the engineman could undoubtedly have seen the position of the switch target in season to stop the train before reaching the switch; but from the position in which the dead body of the engineman was found after the derailment it is concluded that he was not keeping a good lookout. There is evidence that he had crouched down behind the boiler head to light a cigar.

Explosion.—One of the most serious train accidents occurring in the quarter under review was due to an explosion. It is not classed either as a collision or a derailment, and therefore does not appear in Table 2a. In this accident 14 passengers and two other persons were killed and 33 passengers and six other persons were injured. The victims were on a passenger train approaching a small station, at low speed, and the deaths and injuries were due to an explosion of powder in a car of a freight train standing on a side track. The explosion, from some cause unknown, occurred just at the moment that the express car of the passenger train passed the powder car. The passenger cars were wrecked and the total amount of damage to the cars and locomotive was \$11,300. The freight car in question contained 500 kegs of powder. It was stationary at the time and had been so for at least 12 minutes. There had been heavy continuous rains for several hours previous. The car containing the powder was comparatively new. After an exhaustive investigation by officers of the road the cause of the explosion still remained a mystery.

TABLE. NO. 3.—*Details of Table No. 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews.)		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		16		9		33		1
2	Adjusting coupler, cars accidentally started.....	1	5		6	1	13		1
3	Careless manipulation of uncoupling lever.....		1		2		4		
4	Cars not equipped with automatic coupler.....		1		2		2		1
5	Coupler broken, using link and pin or chain.....		7		4	1	6		2
6	Coupling-damaged cars.....		11	1	10	8	26	1	2
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		6		1	2	8	1	
8	Coupling with chain or other emergency appliance because of uneven track.....								
9	Coupling or uncoupling safety chains.....		4		3		6		
10	Fingers or hand caught between uncoupling lever and body of car.....		50		43		91		8
11	Uncoupling without using lever (unnecessary).....		4		4		8		
12	Uncoupling without using lever, uncoupling lever not in working order.....	1	33		21		64		1
13	Foot caught in frog, switch, or guard rail.....	1	3	1	1		5		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	1	24	3	13	2	38	1	2
15	Opening knuckle when cars were near together, engine accidentally started.....		2	1	3		7		1
16	Opening knuckle, part of defective coupler fell on foot.....		3		9		9		2
17	Opening knuckle, lost footing.....		7	1	3	2	16	1	2
18	Riding on car to uncouple, slipped off.....	1	13		5	1	12		
19	Struck by object at side of track.....		7		5		15		
20	Caught by unexpected movement of car, due to slack running in.....	2	20		17	1	28		2
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	3	1		5	2	7		2
22	Uncoupling moving cars and lost footing.....	2	10		3	1	19		
23	Parts hard to move, causing delay.....		4		6		6		
24	Went between cars unnecessarily and contrary to rule.....	4	14	2	7	1	32	1	1
25	Hand caught between projecting load and end of next car.....		1		3		8		
26	No witness (fatal injury).....	2		3		4			
27	Other causes (see detailed list below).....	1	8		5		7		
28	Unexplained.....		1				3		
Total.....		19	256	12	190	26	473	5	28

Details of injuries included in Table No. 3, subclass 27.

- J. 1. Torpedo exploded and piece cut leg.
J. 2. Lumber on car shifted, catching man's head.
J. 3. Head caught by projecting log on car. Killed.
J. 4. End gate of car fell on foot.
J. 5. Car ran over torpedo which exploded, cutting thigh.
J. 6. Lump of coal fell on foot.
J. 7. Brake wheel fell off car, striking man on head.
J. 8. Lump of coal fell on hand.
J. 9. Carelessly left foot on rail and wheel ran over it.
J. 10. Cars accidentally uncoupled and steam from steam pipe scalded man.
F. 1. Piece of coal fell off car on foot.
F. 2. Rail projecting from car caught head.
F. 3. Cut hand on projecting bolt.
F. 4. Riding on car and load shifted, cutting hand.
F. 5. Struck by car on adjacent track.
M. 1. Lump of coal fell from car on head.
M. 2. Torpedo exploded and piece flew, cutting abdomen.
M. 3. Lump of coal fell from car on head.
M. 4. Piece of coal rolled off tender and struck man on head.
M. 5. On viaduct; fell through viaduct to ground below.

TABLE 3A.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other employees.
Loss of feet.....	2	3	6	.....
Loss of legs.....	.....	3	5	1
Loss of arms.....	5	1	7	.....
Loss of hands.....	2	.....	1	.....
Loss of fingers.....	11	7	20	1
Loss of toes.....	1	.....	1	.....
Fractured skull.....	.....	.....	1	.....
Fractured leg.....	2	2	4	.....
Fractured arm.....	3	.....	8	.....
Fractured collar bone or ribs.....	9	3	10	.....
Fractured other bones.....	6	4	13	2
Contusion of head or body.....	40	35	74	3
Contusion or laceration of feet.....	24	14	40	2
Contusion or laceration of toes.....	5	8	8	.....
Contusion or laceration of legs.....	5	8	36	2
Contusion or laceration of arms.....	12	10	24	.....
Contusion or laceration of hands.....	35	26	55	5
Contusion or laceration of fingers.....	73	60	133	11
Dislocation.....	1	1	4	.....
Internal injuries.....	7	2	5	.....
Sprains.....	8	3	17	1
Shock.....	.....	.....	.....	.....
Miscellaneous.....	5	.....	1	.....
Total injuries.....	256	190	473	28
Killed.....	19	12	26	5
Total killed and injured.....	275	202	499	33

RECAPITULATION.

Total killed.....	62
Total injured.....	947
Total killed and injured.....	1,009

TABLE NO. 4.—*Details of Table No. 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	.....	1	.....	2	1	4	.....	1
	2 Ice or snow.....	2	18	.....	10	1	15	.....	3
	3 Parting of train.....	1	14	.....	9	.....	8	.....	3
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	3	41	1	27	5	73	2	4
	5 While setting brakes.....	4	35	1	32	2	57	.....	2
	Fell from—								
	6 Coal car.....	2	8	.....	3	.....	10	3	10
	7 Freight car other than box or coal car.....	1	36	2	19	1	20	1	13
	8 Engine or tender.....	12	130	5	90	4	50	3	19
	9 Passenger car.....	1	16	.....	5	.....	3	.....	5
C7	10 Engines, tenders, or cars (all kinds) not in motion.....	1	106	.....	50	.....	26	1	48
	11 Miscellaneous causes.....	17	233	3	99	5	236	2	65
	12 Not clearly explained.....	20	68	3	25	8	44	2	6
	13 Slipped getting on moving trains or cars.....	7	124	5	72	4	66	8	64
	14 Jumping off moving trains.....	3	143	1	66	3	111	6	59
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	1	56	.....	8	.....	17	.....	5
	16 Fell from engines or cars by reason of defective handholds and sill steps.....	.....	45	.....	24	.....	36	.....	4
	17 Getting on or off moving engine.....	7	208	4	121	3	132	4	41
	18 Caught in frog, guard rail, or switch.....	.....	6	.....	3	.....	6	.....	1
	Total.....	82	1,288	25	665	37	914	32	353

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.*

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 17 records one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring at 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals, and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches and a collision which was due to failure of "controlled manual" block signal working.

Bulletin No. 18 shows total casualties much larger than in the preceding quarters, due largely, no doubt, to an enormous increase in traffic. Many accidents are reported in which the men had been on duty excessively long hours. One collision, killing 17 persons, was due to the error of an engineman of five months' experience, who ran past five warning signals. Another collision, killing 10 persons, was due to the failure of the men in charge of a freight train to identify opposing passenger trains. One derailment of a passenger train, killing 13 persons, was reported as due to some cause that could not be discovered.

Bulletin No. 19 is like Bulletin 18 in showing a large number of casualties. One butting collision, due to failure of train dispatching, caused 34 deaths and 24 injuries and \$50,000 damages, besides the damages for deaths and injuries of persons. One collision was due to the negligence of men who had been worked flagrantly long hours. Particulars are given of a number of collisions due to complicated and unusual causes.

Bulletin No. 20 shows total deaths greater than in the corresponding quarter of the previous year, but the number of passengers and employees killed in train accidents was considerably smaller. The most serious accident in this bulletin was a butting collision of passenger trains, due to misinterpretation of a dispatcher's

* For notes on Bulletins 1 to 16, inclusive, see Bulletin No. 17.

order by a pilot; 10 persons killed, 38 injured. One derailment, unexplained, train running slowly, caused 9 deaths and 18 injuries.

Bulletin No. 21 contains the record of only one train accident—a collision—in which more than 10 persons were killed, but the totals of casualties of all classes are large, no improvement being shown over preceding quarters. Number of passengers killed in train accidents, 52. One collision, killing 17 and injuring 56, was due to confusion of telegraphic orders; one derailment, killing 9 and injuring 43, was at a misplaced switch, and another, killing 7 and injuring 40, was due to excessive speed.

Bulletin No. 22 shows 180 passengers killed in train accidents—a number larger than that in any other bulletin, except No. 13. One rear collision in the District of Columbia caused the death of 43 passengers and the injury of 63. A butting collision killed 43 persons and injured 155, the bodies of the killed being consumed by fire. In the derailment of a passenger train at a drawbridge 57 persons were killed and 36 injured.



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ACCIDENT BULLETIN NO. 24

Showing
Collisions and Derailments of Trains
and
Casualties to Persons

during the months of

April, May, and June, 1907

with

Tables for the year ending June 30, 1907

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



THE INTERSTATE COMMERCE COMMISSION.

Hon. MARTIN A. KNAPP, of New York, Chairman.

Hon. JUDSON C. CLEMENTS, of Georgia.

Hon. CHARLES A. PROUTY, of Vermont.

Hon. FRANCIS M. COCKRELL, of Missouri.

Hon. FRANKLIN K. LANE, of California.

Hon. EDGAR E. CLARK, of Iowa.

Hon. JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 24.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING JUNE 30, 1907.

The number of persons killed in train accidents during the months of April, May, and June, 1907, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 250, and of injured 4,124. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off cars, etc., bring the total number of casualties up to 19,711 (1,065 killed and 18,646 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.^a

TABLE No. 1.—*Casualties to persons—April, May, and June, 1907. a b c*

	Passengers (a and b).		Persons carried under agreement or contract (bb).		Total (a, b, and bb).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	5	626	2	102	7	728	50	501	13	198
Derailments.....	34	1,161	7	132	41	1,293	63	445	6	54
Miscellaneous train accidents, including locomotive boiler explosions.....	.....	29	.....	4	.....	33	19	273	.....	76
Total train accidents.....	39	1,816	9	238	48	2,054	132	1,219	19	328
Coupling or uncoupling.....	.....	.....	.....	.....	.....	.....	19	260	13	179
While doing other work about trains or while attending switches.....	.....	.....	.....	.....	.....	.....	21	1,954	13	669
Coming in contact with overhead bridges, structures at side of track, etc.....	1	4	.....	3	1	7	31	198	3	65
Falling from cars or engines or while getting on or off.....	43	542	6	16	49	558	65	1,157	34	574
Other causes.....	11	505	2	67	13	572	44	176	29	78
Total (other than train accidents).....	55	1,051	8	86	63	1,137	180	3,745	92	1,565
Total all classes.....	94	2,867	17	324	111	3,191	312	4,964	111	1,893

^a In Table No. 1 the passengers have been divided into three classes. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight.

^b Table No. 1 is continued on next page.

^c Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

TABLE No. 1.—*Casualties to persons—April, May, and June, 1907—Continued.*

	Yard train- men (switching crews).		Other em- ployees.		Total em- ployees.		Total all persons.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	9	92	24	200	96	991	103	1,719
Derailments.....	5	77	9	97	83	673	124	1,966
Miscellaneous train accidents, including locomotive boiler explosions.....	1	32	3	25	23	406	23	439
Total train accidents.....	15	201	36	322	202	2,070	250	4,124
Coupling or uncoupling.....	35	502	5	32	72	973	72	973
While doing other work about trains or while attending switches.....	15	805	27	815	76	4,243	76	4,243
Coming in contact with overhead bridges, structures at side of track, etc.....	6	93		21	40	377	41	384
Falling from cars or engines or while get- ting on or off.....	56	880	39	413	194	3,024	243	3,582
Other causes.....	23	100	274	4,414	370	4,768	383	5,340
Total (other than train accidents)...	135	2,380	345	5,695	752	13,385	815	14,522
Total all classes.....	150	2,581	381	6,017	954	15,455	1,065	18,646

The quarter ending with June usually shows lighter accident records than any other quarter of the year, and this is generally true in the present instance; but the principal totals are all larger than in the same quarter one year ago, as appears from the table next following. This may in large measure be accounted for by the marked and constant increase in railroad traffic. The number of passengers killed in train accidents, which fluctuates more than any other item, is very much larger than one year ago; but there is a marked diminution from the high figure reported three months ago. In the present bulletin, derailment No. 6 (Table 2a), killing 33 and injuring 19, and collision No. 1, killing 8 and injuring 37, are the extraordinary items.

Comparison of principal items with last bulletin and with one year back.

	Bulletin 24.	Bulletin 23.	Bulletin 20.
1. Passengers killed in train accidents	48	126	27
2. Passengers killed, all causes	111	184	81
3. Employees killed in train accidents.....	202	205	167
4. Employees killed in coupling.....	72	62	68
5. Employees killed, all causes.....	954	1,109	852
6. Total passengers and employees killed, all causes.....	1,065	1,293	933

The total number of collisions and derailments in the quarter now under review was 3,777 (1,806 collisions and 1,971 derailments), of which 220 collisions and 221 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$3,232,673. Given more in detail, these facts appear as below:

TABLE No. 2.—*Collisions and derailments, April, May, and June, 1907.*

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	402	\$472,031	26	419
Collisions, butting.....	228	368,239	45	717
Collisions, train separating.....	144	63,521	3	44
Collisions, miscellaneous.....	1,032	427,453	29	539
Total.....	1,806	1,331,244	103	1,719
Derailments due to defects of roadway, etc.....	426	394,970	13	625
Derailments due to defects of equipment.....	821	672,783	15	276
Derailments due to negligence of trainmen, signalmen, etc..	106	63,682	10	178
Derailments due to unforeseen obstruction of track, etc....	91	154,640	16	112
Derailments due to malicious obstruction of track, etc.....	11	67,480	3	46
Derailments due to miscellaneous causes.....	516	547,874	67	729
Total.....	1,971	1,901,429	124	1,966
Total collisions and derailments.....	3,777	3,232,673	227	3,685

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE 2a.—*Causes of thirty-two prominent train accidents (Class A).*

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	B	P and F.....	8	37	\$695	91	Disregard of telegraphic orders. See note in text below.
2	M	F and F.....	0	0	2,100	42	Collision on side track. Train moving only one mile an hour, but engineman fell asleep and slept two minutes; had been on duty 21 hours.
3	B	P and F.....	0	13	6,800	11	Eastbound freight encroached on time of westbound passenger train (1 a. m.). Engineman did not know road; had taken this run by making misrepresentation. Conductor and two brakemen asleep.
4	B	F and F.....	1	4	7,000	16	Runaway on steep grade 3 a. m. See note in text below.
5	B	P and F.....	4	33	8,000	68	Engineman of westbound freight (who was killed) evidently forgot regular eastbound passenger train. Passenger train scheduled for only two days in the week, Saturday and Sunday.
6	R	F and F.....	0	2	10,000	7	Flagman of pushing engine failed to signal following train.

TABLE 2a.—Causes of thirty-two prominent train accidents (Class A)—Continued.

COLLISIONS—Continued.

10	B	F and F.	0	4	10,600	72	Freight train entered yard 1 a. m. with speed not under control.
11	B	F and F.	1	2	10,933	33	Butting collision at water station; engineman asleep.
12	R	P and F.	2	21	12,000	5	Failure of block signaling and flagging. See note in text below.
13	R	F and F.	0	2	13,000	9	Runaway, due to failure of air pump, neglect to slacken speed on passing over summit, and failure to apply hand brakes.
14	B	P and F.	1	7	13,000	12	Empty engine encroached on time of passenger train. Engineman's watch slow, not having been wound; engineman's experience as a runner, six months.
15	R	F and F.	0	1	16,000	18	Signal cleared when track was not clear. This was made possible by the breakage of a connection at an interlocking cabin. Signaller held negligent.
16	B	F and F.	6	4	36,670	14	Operator accepted order after train had passed. See note in text below.
17	R	F and F.	0	2	56,889	6	Rear collision of freight trains in tunnel. A comparatively light train overtook a heavier one. Time interval at last station 10 minutes. Leading train held blame-worthy for not signaling by fusee, and the following train for running too fast. Tunnel lining took fire and was damaged \$50,000.
Total collisions			27	144	234,309		

DERAILMENTS.

1	D	P.	2	0	\$5,400	31	Excessive speed; engine running tender first.
2	D	F.	1	2	11,000	52	Spreading of rails; roadbed softened by rain.
3	D	P.	0	26	11,000	86	Unknown.
4	D	P.	1	20	13,000	51	Track distorted by solar heat.
5	D	F.	0	0	14,000	82	Broken flange. Derailed cars wrecked a bridge.
6	D	P.	33	19	14,300	63	Unknown. See note in text below.
7	D	F.	0	1	15,900	88	Unknown. Damage due mainly to explosions of naphtha and gunpowder.
8	D	F.	1	1	19,930	59	Failure of bridge; bridge damaged by blasting near by at the moment the train entered upon it.
9	D	P.	0	26	20,032	62	Rails maliciously loosened.
10	D	F.	1	1	25,000	28	Landslide in the night. Inspector had detected no indication of trouble.
11	D	P.	2	26	30,000	23	Roadbed undermined by water from springs not before known to exist.
12	D	P.	2	5	32,000	30	Switch maliciously misplaced.
13	D	F.	1	10	34,000	58	Rock slide. This occurred on an old railroad. It is believed that blasting 1,000 feet distant had fractured the rock so as to permit vegetation to disintegrate it.
14	D	P.	0	35	61,224	75	Defective track. See note in text below.
15	D	P.	3	21	84,500	22	Unknown. See note in text below.
Total derailments.			47	193	391,186		
Total collisions and derailments.			74	337	625,495		

Derailed No. 6, by far the worst accident in the present record, causing the death of 33 persons and the injury of 19, is reported as due to some cause undiscovered. A passenger train, running at regular

speed, was derailed at a facing point split switch and the two cars next behind the engine were completely wrecked. When these came to rest they were lying close to the engine, so that steam escaping from the boiler scalded the occupants of the cars. The engine appears to have passed over the switch in safety, and the two cars next following evidently were thrown off by the partial movement of the switch. Of the 7 cars in the train the two at the rear passed over the switch without being derailed. It would appear that some part of the engine broke and fell to the track, causing the movement of the switch rails, but it was impossible to discover any positive evidence of this. The side track leading from the switch diverged to the left, and the switch rail on the left side of the track was found after the accident in proper position and undamaged. The engine and tender, though they passed over the switch without being derailed, were knocked off the track in some way, presumably by the derailed car next behind them, and the tender was pushed against the engine in such a way as to overturn it. It is possible that the leading truck of the tender was the one that caused the damage to the switch and that first left the track. The switch was fitted with a circuit breaker so adjusted as to set an automatic block signal against an approaching train if the switch point were more than one-quarter of an inch away from the stock rail. This circumstance affords additional evidence that the switch was in proper position when the leading wheels of the engine ran onto it.

Collision No. 1 was between a westbound passenger train and an eastbound work train, and all of the victims were employees, except three passengers slightly injured. All of the 8 killed and 32 of the injured were laborers riding in the leading car of the work train, the engine of this train being at the rear end. The collision occurred on a line where, although the railroad is double-tracked, one of these tracks for a few miles is used for suburban trains in both directions and the other one for other trains. On the day in question, which was Sunday, the suburban trains were run on the track usually used by other trains, in order to facilitate repairs on the suburban track. This temporary arrangement was to last from 7 a. m. to 7 p. m. The collision occurred at 6.50 p. m. A supplementary order had just been issued extending the temporary arrangement, but it appears to have been misunderstood. The passenger train was made up on the proper track, but it was run through a crossover to the other track, the conductor adjusting the switch himself, and it proceeded on the wrong track in disregard of the special orders, which were clear and which no one claims to have misunderstood. The collision occurred before the passenger train had run more than a half mile. The

conductor of the passenger train is reported as having left for parts unknown soon after the accident.

Collision No. 4, causing the death of a fireman 21 years old and the serious injury of one other trainman, was due to inefficient management of the air brakes on a heavy freight train descending a $2\frac{1}{2}$ per cent grade at 3 a. m., the engineman at that time having been on duty about 21 hours. The grade in question is 26 miles long, and the train had been run safely for 23 miles when the engineman appears to have allowed the speed to increase to such a rate that there was not sufficient time to recharge the air-brake main reservoir. He had made repeated applications of the brakes, and finally was unable to apply them with sufficient force. The train consisted of 18 cars, weighing about 600 tons, and after it became uncontrollable it collided with an engine standing at a water tank. The engineman at fault had been in the employ of this company about two months, but had been an engineman elsewhere three and one-half years and had served as a fireman, before that, for over five years. One of the cars in the train had no air brakes working, and two others had leaky brake cylinders. Although the engineman had been on duty 21 hours, he avers that he did not feel sleepy. This crew had been assigned to a work train during the day, and the men had had some time to sleep while the engine was at rest waiting for the laborers to load material. The report says that the brakeman on the forward end of this train was intoxicated at the time of the runaway, so that his services were of little or no value in controlling the speed of the train.

Collision No. 12 was due to an erroneous signal given by a block-signal operator and to the failure of the conductor and the rear brakeman of a freight train to flag a following passenger train. The collision occurred at 2.20 a. m. The freight train was standing partly in a yard, and the block-signal operator reported it as having gone out of the block section, thus allowing the passenger train to come on from the block station in the rear, when in fact a part of the freight train had not cleared the block. The signalman, who had been in the service three years, offered the inadmissible excuse that he had been assured by the yardmaster that the block section was clear. The rear brakeman of the freight endeavored to excuse himself by asserting that the conductor had passed the rear end of the train, apparently going to signal the passenger train. The conductor, who had been in the service four years, refused to attend the hearing on the accident. He, as well as the brakeman and the block signalman, was dismissed from the service, as was the engineman also, for not sounding a whistle signal to notify the rear brakeman to go back with a red signal.

Collision No. 16, causing 6 deaths and 4 injuries, occurred at 3 a. m., and was due to wrong information given by a telegraph operator to the train dispatcher. This operator was 18 years 8 months of age, and had been in the service 11 months. The train passed his station at 2.50 a. m., and he made the proper entry in his book; but 10 minutes later, when the dispatcher inquired if that train had passed, the operator, without looking at the book, replied that it had not, whereupon the dispatcher sent an order for this train to meet another one, and a few minutes afterwards permitted the opposing train to proceed from the other station. The operator at fault soon discovered his mistake, but not in time to prevent the collision.

Derailment No. 14 is reported as due to defective track. An east-bound passenger train, running about 35 miles an hour on an easy curve, ran off the track, and the whole train, consisting of an engine and eight cars, fell down a bank about 20 feet high. As soon as the train left the track a gas tank attached to the bottom of the dining car exploded, setting fire to the train, and all of the cars, except the mail car, were burned up. Another passenger train had gone over this track in the opposite direction about 30 minutes before the occurrence of the accident, and the engineman and fireman of that train say that they felt a slight irregularity in the track, apparently a low joint, but did not deem it dangerous. It is believed, however, that as there was not quite enough ballast in the track on the outside of the curve the rails were thrown out of line by the rear end of the west-bound train. One 75-pound rail, 9 years old, was found broken, but it is not certain that this break occurred before the train ran off the track.

Derailment No. 15, causing the death of 3 passengers and the injury of 19 passengers and 2 trainmen, is reported as due to some cause unknown. The train consisted of an engine and eight passenger and baggage cars, and it was running at about 50 miles an hour. The derailment occurred at 1.20 a. m. The wreck took fire from an explosion of illuminating gas, and was destroyed by fire, with the exception of one sleeping car. The report says that the track, which consisted of rails weighing 75 pounds per yard and sleepers in first-class condition, was in good line and surface, and that there were no indications either of a broken rail or of loosened spikes.

TABLE NO. 3.—Details of Table No. 1—Causes of accidents to employees in coupling and uncoupling cars.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		20		17		42		1
2	Adjusting coupler, cars accidentally started.....		6		3	1	8		1
3	Careless manipulation of uncoupling lever.....		7		5		23		
4	Cars not equipped with automatic coupler.....	1	3		1		3		
5	Coupler broken, using link and pin or chain.....		7		4	1	10		
6	Coupling damaged cars.....	1	15	2	10	1	31		4
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		2		6	2	14		
8	Coupling with chain or other emergency appliance because of uneven track.....	1			1		2		
9	Coupling or uncoupling safety chains.....		2				10		1
10	Fingers or hand caught between uncoupling lever and body of car.....		54		33		93		9
11	Uncoupling without using lever (unnecessary).....		8		5		5		
12	Uncoupling without using lever, uncoupling lever not in working order.....	1	27		17	1	55		3
13	Foot caught in frog, switch, or guard rail.....		2	1	2	4	7	1	
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	1	23	5	14	5	44	2	3
15	Opening knuckle when cars were near together, engine accidentally started.....	1	2			1	7		1
16	Opening knuckle, part of defective coupler fell on foot.....		1		3		7		
17	Opening knuckle, lost footing.....	2	9		2	2	4		
18	Riding on car to uncouple, slipped off.....	1	3		3	3	7		
19	Struck by object at side of track.....		12	1	5	1	17		
20	Caught by unexpected movement of car, due to slack running in.....	1	25	1	17	1	28		3
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals..	1	3	1	3	1	3		
22	Uncoupling moving cars and lost footing.....	2	5		10	3	21		1
23	Parts hard to move, causing delay.....	1	7	1	1		15		
24	Went between cars unnecessarily and contrary to rule.....	1	6	1	12	1	18	1	3
25	Hand caught between projecting load and end of next car.....		2				7		
26	No witness (fatal injury).....	3				6		1	
27	Other causes (see detailed list below).....		5		2		15		1
28	Unexplained.....	1	4		3	1	6		1
	Total.....	19	260	13	179	35	502	5	32

Details of injuries included in Table 3, subclass 27.

- A. 1. Roof boards fell on head.
- A. 2. On trestle; fell to ground.
- A. 3. Struck by steam hose which blew off.
- A. 4. Stepped on lump of coal.
- A. 5. Piece of iron fell off tank on head.
- A. 6. Stepped in hole.
- M. 1. Apron of car fell on foot.
- M. 2. Struck by air hose which flew up.
- M. 3. Stepped in hole.
- M. 4. Coupler broke and piece flew, striking hand.
- M. 5. Closing knuckle with iron bar, bar slipped and struck head.
- M. 6. Piece of iron fell off car on foot.
- M. 7. Coat caught on car; fell under wheels.
- M. 8. Lever flew up and struck face.
- M. 9. Continuous rod flew out and hit face.
- J. 1. Anglecock broke and struck leg.
- J. 2. Stepped on nail.
- J. 3. Tie fell off car on head.
- J. 4. Apron of car fell on foot.
- J. 5. Lump of coal rolled off car, striking chest.
- J. 6. Hose flew up and struck leg.
- J. 7. Stepped on nail in plank.
- J. 8. Air hose flew up, striking leg.

TABLE 3A.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Train- men.	Train- men in yards.	Yard train- men.	Other em- ployees.
Loss of feet.....	5	5	9	
Loss of legs.....	3	4	3	
Loss of arms.....	2	2	6	2
Loss of hands.....	2	1	2	
Loss of fingers.....	16	8	13	3
Loss of toes.....	3	2	4	
Fractured skull.....		2		
Fractured leg.....	2		1	2
Fractured arm.....	5	4	6	1
Fractured collar bone or ribs.....	4	6	11	
Fractured other bones.....	8	4	19	
Contusion of head or body.....	30	19	68	4
Contusion or laceration of feet.....	17	17	41	
Contusion or laceration of toes.....	7	3	10	1
Contusion or laceration of legs.....	7	4	33	
Contusion or laceration of arms.....	13	9	18	
Contusion or laceration of hands.....	49	24	78	12
Contusion or laceration of fingers.....	71	48	151	5
Dislocation.....			2	
Internal injuries.....	4	4	8	
Sprains.....	9	10	18	1
Shock.....				1
Miscellaneous.....	3	3	1	
Total injuries.....	260	179	502	32
Killed.....	19	13	35	5
Total killed and injured.....	279	192	537	37

RECAPITULATION.

Total killed.....	72
Total injured.....	973
Total killed and injured.....	1,045

TABLE NO. 4.—*Details of Table No. 1.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub- class.	Causes.	Train- men.		Train- men in yards.		Yard trainmen (switch- ing crews).		Other em- ployees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	1	9		1	1	10		1
	2 Ice or snow.....		2		1				1
	3 Parting of train.....		16	2	2		8	1	
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	4	49	2	36	6	83		11
	5 While setting brakes.....	1	27	4	21	9	54	1	2
	Fell from—								
	6 Coal car.....	1	8	2	5	1	5		8
	7 Freight car other than box or coal car.....	4	53	2	14	1	12	7	23
	8 Engine or tender.....	10	118	5	54	4	48	1	14
	9 Passenger car.....	1	11		2		4		6
C7	10 Engines, tenders, or cars (all kinds) not in motion.....		77		46		24		57
	11 Miscellaneous causes.....	15	216		112	11	216	3	85
	12 Not clearly explained.....	13	58	6	13	9	37	4	13
	13 Slipped getting on moving trains or cars.....	5	137	2	63	6	84	8	70
	14 Jumping off moving trains.....	3	124	3	63	2	105	5	76
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	1	25		10		15		4
	16 Fell from engines or cars by reason of defective handholds and sill steps.....	2	31		21	1	33		4
	17 Getting on or off moving engine.....	4	191	6	104	5	140	8	37
	18 Caught in frog, guard rail, or switch.....		5		6		2	1	1
	Total.....	65	1,157	34	574	56	890	39	413

YEARLY TABLES.

This bulletin completes the publication of the accident records under the law of March 3, 1901, for six years, and the table next following, Table A, gives the aggregates for the year ending June 30, 1907, of the items which are given in Table No. 1 of the quarterly returns. The total number of casualties shown in Table A is 81,286 (5,000 killed and 76,286 injured).

This table includes the following statistics which did not appear in the quarterly bulletins, the reports from which they are taken having been received after the bulletins were printed: Eight passengers and 22 employees killed and 103 passengers and 85 employees injured; damage to railroad companies' property (25 collisions and 28 derailments), \$64,931.

The totals of these yearly tables are not comparable with those given in the Commission's Annual Statistical Reports, for the reason that the monthly reports deal only with accidents to passengers and to employees while actually on duty. The monthly reports take no account of accidents to "other persons." These appear in the Annual Reports and include casualties at highway crossings, to trespassers, to persons walking along the track, accidents to employees in shops remote from the railroad, and all other accidents not occurring to passengers and to employees actually on duty.

The salient facts in the tables for the year are, first, that there have been heavy increases in all of the items, except accidents in car coupling and from striking against overhead obstructions, and, second, that the number of passengers killed and injured in collisions and derailments has increased to an alarming degree. (See Table B, first item.) In this item the very large total reported in 1905 is now exceeded by 17 per cent.

The general increase in all classes has already been referred to, in this and preceding bulletins, as connected with the great expansion of railroad traffic, though this is not to be regarded as the complete explanation.

The comparative smallness of the increases in casualties due to coupling cars and in accidents occurring to men on the tops of freight cars is undoubtedly due in large measure to improvement in the maintenance and care of automatic couplers, and to increased use of air brakes on freight trains, relieving trainmen, in some degree, from the duty of riding on the tops of cars. Both of these features—couplers and brakes—have been the subject of regulating laws, passed by Congress, the beneficent effect of which is here again observable.

The disastrous record of casualties to passengers in train accidents (410 killed) is due in large measure to ten accidents which caused the

deaths of 291 persons. These have been explained in the four quarterly statements. Nine of the ten accidents occurred in six States—California, Indiana, Kansas, New Jersey, New York, North Carolina—and one in the District of Columbia.

Following is a list of these ten cases:

Ten prominent accidents in the year ending June 30, 1907.

Quarter.		Killed.	Injured.	State.
First.....	Collision—Confusion of dispatcher's orders.	17	56	North Carolina.
Second.....	Collision—Disregard of rules and signals ..	43	63	District of Columbia.
Do.....	Collision—Neglect in connection with whistle signals.	43	155	Indiana.
Do.....	Derailment—Defective or unfastened track at drawbridge.	57	36	New Jersey.
Third.....	Collision—Operator failed to deliver meeting order.	32	75	Kansas.
Do.....	Collision—Engineman disregarded block signal.	9	8	Indiana.
Do.....	Derailment—Unexplained.....	19	149	New York.
Do.....	Explosion—Unexplained.....	16	39	Indiana.
Do.....	Derailment—Misplaced switch.....	22	116	California.
Fourth.....	Derailment—Unexplained.....	33	19	Do.

From Table B, next following, comparisons may be made for the last four years.

TABLE B.—*Casualties to passengers and employees, years ending June 30.*

	1907.		1906.		1905.		1904.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers:								
In train accidents.....	410	9,070	182	6,778	350	6,408	270	4,945
Other causes.....	237	4,527	236	4,407	187	3,542	150	3,132
Total.....	647	13,597	418	11,185	537	10,040	420	8,077
Employees:								
In train accidents.....	1,011	8,924	879	7,483	798	7,052	844	6,990
In coupling accidents....	302	3,948	311	3,503	243	3,110	278	3,441
Overhead obstructions, etc.....	134	1,591	132	1,497	92	1,185	116	1,210
Falling from cars, etc....	790	12,565	713	11,253	633	9,237	700	9,371
Other causes.....	2,116	35,661	1,772	31,788	1,495	24,842	1,429	22,254
Total.....	4,353	62,689	3,807	55,524	3,261	45,426	3,367	43,266
Total passengers and employees.....	5,000	76,286	4,225	66,709	3,798	55,466	3,787	51,343

The following tables are self-explanatory, being consolidations of the quarterly tables giving the same classes of facts:

TABLE C.—*Collisions and derailments, damage to cars, engines, and roadway, years ending June 30.*

	1907.				1906.			
	Num- ber.	Loss.	Killed.	In- jured.	Num- ber.	Loss.	Killed.	In- jured.
Collisions, rear.....	1,957	\$2,003,509	233	2,423	1,722	\$1,720,365	169	2,427
Collisions, butting.....	1,065	1,935,505	327	3,616	866	1,599,568	251	2,733
Collisions, train separating....	695	259,495	13	322	901	359,156	9	375
Collisions, miscellaneous.....	4,309	2,101,059	203	3,180	3,705	1,640,669	175	2,379
Total.....	8,026	6,299,568	776	9,541	7,194	5,319,758	604	7,914
Derailments due to defects of roadway, etc.....	1,528	1,255,114	58	1,983	1,287	918,056	38	1,608
Derailments due to defects of equipment.....	3,178	2,490,028	59	926	2,811	2,226,153	42	802
Derailments due to negligence of trainmen, signalmen, etc..	495	396,626	130	756	391	318,067	54	494
Derailments due to unforeseen obstruction of track, etc....	387	556,725	68	658	300	472,653	76	456
Derailments due to malicious obstruction of track, etc....	59	153,694	14	176	65	106,859	16	94
Derailments due to miscella- neous causes.....	1,785	1,713,947	186	2,196	1,407	1,297,643	147	1,318
Total.....	7,432	6,566,134	515	6,695	6,261	5,339,431	373	4,772
Total collisions and de- railments.....	15,458	12,865,702	1,291	16,236	13,455	10,659,189	977	12,686

TABLE D.—*Causes of accidents to employees in coupling and uncoupling cars, year ending June 30, 1907.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		69		47		145		5
2	Adjusting coupler, cars accidentally started.....	3	17	1	20	6	37	1	4
3	Careless manipulation of uncoupling lever.....		18		11		44	1	2
4	Cars not equipped with automatic coupler.....	1	12		6		10		6
5	Coupler broken, using link and pin or chain.....	4	24		16	6	32		3
6	Coupling damaged cars.....	3	52	3	39	16	107	2	3
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		18		13	6	42	2	3
8	Coupling with chain or other emergency appliance because of uneven track.....	1	2		1		6		
9	Coupling or uncoupling safety chains.....	1	11	1	7		32		2
10	Fingers or hand caught between uncoupling lever and body of car.....		238		140		370		23
11	Uncoupling without using lever (unnecessary).....	1	30		21	1	28		1
12	Uncoupling without using lever, uncoupling lever not in working order.....	3	145	1	91	10	279		7
13	Foot caught in frog, switch, or guard rail.....	3	7	4	6	14	25	2	1
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	6	103	10	59	14	159	4	12
15	Opening knuckle when cars were near together, engine accidentally started.....	1	10	1	9	3	25		3
16	Opening knuckle, part of defective coupler fell on foot.....		10		16		37		3
17	Opening knuckle, lost footing.....	6	32	8	17	6	51	1	2
18	Riding on car to uncouple, slipped off.....	7	30		14	9	42	1	
19	Struck by object at side of track.....	1	36	2	14	3	60		4
20	Caught by unexpected movement of car, due to slack running in.....	9	88	3	61	2	102		8
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals..	8	16	4	14	4	22		3
22	Uncoupling moving cars and lost footing.....	8	29	3	22	8	79		1
23	Parts hard to move, causing delay.....	1	22	1	15		44		
24	Went between cars unnecessarily and contrary to rule.....	8	46	5	31	5	91	4	8
25	Hand caught between projecting load and end of next car.....		14		7		24		
26	No witness (fatal injury).....	10		9		21		3	
27	Other causes (see detailed list below).....	2	34		12		59		5
28	Unexplained.....	1	17	1	9	1	33	1	1
	Total.....	88	1,130	57	718	135	1,985	22	115

TABLE Dx.—*Nature of injuries to employees in coupling and uncoupling cars, year ending June 30, 1907.*

Injuries.	Train-men.	Train-men in yards.	Yard trainmen.	Other employees.
Loss of feet.....	12	13	29	
Loss of legs.....	6	8	15	2
Loss of arms.....	9	8	22	3
Loss of hands.....	4	6	7	
Loss of fingers.....	61	29	75	6
Loss of toes.....	10	3	11	
Fractured skull.....	1	2	2	
Fractured leg.....	9	3	12	2
Fractured arm.....	14	7	28	2
Fractured collar bone or ribs.....	30	15	38	1
Fractured other bones.....	31	14	57	3
Contusion of head or body.....	151	106	289	17
Contusion or laceration of feet.....	83	59	165	4
Contusion or laceration of toes.....	27	17	40	1
Contusion or laceration of legs.....	39	27	125	4
Contusion or laceration of arms.....	73	31	107	5
Contusion or laceration of hands.....	177	109	265	24
Contusion or laceration of fingers.....	339	224	588	28
Dislocation.....	5	2	7	1
Internal injuries.....	14	9	29	3
Sprains.....	25	18	64	5

TABLE Dx.—Nature of injuries to employees in coupling and uncoupling cars, year ending June 30, 1907—Continued.

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other employees.
Shock.....				1
Miscellaneous.....	10	8	10	3
Total injuries.....	1, 130	718	1, 985	115
Killed.....	88	57	135	22
Total killed and injured.....	1, 218	775	2, 120	137

RECAPITULATION.

Total killed.....	302
Total injured.....	3, 948
Total killed and injured.....	4, 250

TABLE E.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines, year ending June 30, 1907.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	4	26	....	10	3	35	....	7
	2 Ice or snow.....	2	30	1	19	1	21	....	9
	3 Parting of train.....	4	47	3	21	3	28	1	5
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	16	199	9	130	21	317	6	31
	5 While setting brakes.....	10	132	8	111	18	218	1	11
	Fell from—								
	6 Coal car.....	3	30	3	15	4	36	6	32
	7 Freight car other than box or coal car.....	20	183	6	65	4	61	14	77
	8 Engine or tender.....	45	524	21	264	22	182	10	64
	9 Passenger car.....	5	48	....	12	4	8	1	26
C7	10 Engines, tenders, or cars (all kinds) not in motion.....	1	327	....	181	1	90	3	193
	11 Miscellaneous causes.....	53	986	10	464	33	861	14	283
	12 Not clearly explained.....	78	251	17	100	35	172	11	50
	13 Slipped getting on moving trains or cars.....	30	532	12	237	20	274	31	251
	14 Jumping off moving trains.....	17	563	7	270	9	438	23	249
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	6	205	....	37	....	57	....	24
	16 Fell from engines or cars by reason of defective handholds and sill steps.....	2	152	1	89	1	158	....	17
	17 Getting on or off moving engine.....	23	820	21	423	26	542	23	165
	18 Caught in frog, guard rail, or switch.....	....	22	1	18	1	27	1	3
	Total.....	319	5, 077	120	2, 466	206	3, 525	145	1, 497

[PUBLIC—No. 171.]

AN ACT requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier

and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 17 records one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring at 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals, and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches and a collision which was due to failure of "controlled manual" block signal working.

Bulletin No. 18 shows total casualties much larger than in the preceding quarters, due largely, no doubt, to an enormous increase in traffic. Many accidents are reported in which the men had been on duty excessively long hours. One collision, killing 17 persons, was due to the error of an engineman of five months' experience, who ran past five warning signals. Another collision, killing 10 persons, was due to the failure of the men in charge of a freight train to identify opposing passenger trains. One derailment of a passenger train, killing 13 persons, was reported as due to some cause that could not be discovered.

Bulletin No. 19 is like Bulletin 18 in showing a large number of casualties. One butting collision, due to failure of train dispatching, caused 34 deaths and 24 injuries and \$50,000 damages, besides the damages for deaths and injuries of persons. One collision was due to the negligence of men who had been worked flagrantly long hours. Particulars are given of a number of collisions due to complicated and unusual causes.

Bulletin No. 20 shows total deaths greater than in the corresponding quarter of the previous year, but the number of passengers and employees killed in train accidents was considerably smaller. The most serious accident in this bulletin was a butting collision of passenger trains, due to misinterpretation of a dispatcher's order by a pilot; 10 persons killed, 38 injured. One derailment, unexplained, train running slowly, caused 9 deaths and 18 injuries.

Bulletin No. 21 contains the record of only one train accident—a collision—in which more than 10 persons were killed, but the totals of casualties of all classes are large, no improvement being shown over preceding quarters. Number of passengers killed in train accidents, 52. One collision, killing 17 and injuring 56, was due to confusion of telegraphic orders; one derailment, killing 9 and injuring 43, was at a misplaced switch, and another, killing 7 and injuring 40, was due to excessive speed.

^a For notes on Bulletins 1 to 16, inclusive, see Bulletin No. 17.

Bulletin No. 22 shows 180 passengers killed in train accidents—a number larger than that in any other bulletin, except No. 13. One rear collision in the District of Columbia caused the death of 43 passengers and the injury of 63. A butting collision killed 43 persons and injured 155, the bodies of the killed being consumed by fire. In the derailment of a passenger train at a drawbridge 57 persons were killed and 36 injured.

Bulletin No. 23 shows 126 passengers killed in train accidents. It contains the record of two collisions killing 41 persons, and two derailments killing the same number. The number of employees killed in coupling accidents is 25 per cent less than in the last preceding quarter.

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Interstate Commerce Commission

Washington, D. C.

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Accident Bulletin

No. 25

July, August, and September
1907



Washington

Government Printing Office

1908

ACCIDENT BULLETIN NO. 25

Showing

Collisions and Derailments of Trains

and

Casualties to Persons

during the months of

July, August, and September, 1907

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



THE INTERSTATE COMMERCE COMMISSION.

MARTIN A. KNAPP, of New York, Chairman.

JUDSON C. CLEMENTS, of Georgia.

CHARLES A. PROUTY, of Vermont.

FRANCIS M. COCKRELL, of Missouri.

FRANKLIN K. LANE, of California.

EDGAR E. CLARK, of Iowa.

JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 25.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING SEPTEMBER 30, 1907.

The number of persons killed in train accidents during the months of July, August, and September, 1907, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 346, and of injured, 4,990. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 23,063 (1,339 killed and 21,724 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.

TABLE No. 1.—*Casualties to persons, July, August, and September, 1907.^a*

	Passen- gers.		Persons carried un- der agree- ment or contract.		Total (a, b, and bb).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	73	1,439	4	124	77	1,563	64	617	18	224
Derailments.....	31	945	2	131	33	1,076	61	504	8	61
Miscellaneous train accidents, including locomotive boiler explosions.....	.....	18	.....	6	.....	24	28	294	4	66
Total train accidents.....	104	2,402	6	261	110	2,663	153	1,415	30	351
Coupling or uncoupling.....	.....	.....	.....	.....	.....	.....	23	288	25	212
While doing other work about trains or while attending switches.....	.....	.....	.....	.....	.....	.....	25	2,396	12	807
Coming in contact with overhead bridges, structures at side of track, etc.....	2	15	.....	3	2	18	26	233	4	66
Falling from cars or engines or while get- ting on or off.....	58	656	2	16	60	672	83	1,441	40	700
Other causes..	20	800	3	72	23	872	69	264	29	100
Total (other than train accidents)....	80	1,471	5	91	85	1,562	226	4,622	110	1,885
Total all classes.....	184	3,873	11	352	195	4,225	379	6,037	140	2,236

^a In Table No. 1 the passengers have been divided into three classes. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight.

TABLE No. 1.—*Casualties to persons, July, August, and September, 1907.*^{a b}—Contd.

	Yard train- men (switch- ing crews).		Other em- ployees.		Total em- ployees.		Total all persons.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	15	139	22	202	119	1,182	196	2,745
Derailments.....	8	62	3	86	80	713	113	1,789
Miscellaneous train accidents, including locomotive boiler explosions.....	2	45	3	27	37	432	37	456
Total train accidents.....	25	246	28	315	236	2,327	346	4,990
Coupling or uncoupling.....	35	455	4	31	87	986	87	986
While doing other work about trains or while attending switches.....	18	892	26	815	81	4,910	81	4,910
Coming in contact with overhead bridges, structures at side of track, etc.....	5	109	2	16	37	424	39	442
Falling from cars or engines or while get- ting on or off.....	50	967	54	426	227	3,534	287	4,206
Other causes.....	32	112	346	4,842	476	5,318	499	6,190
Total (other than train accidents)...	140	2,535	432	6,130	908	15,172	993	16,734
Total all classes.....	165	2,781	460	6,445	1,144	17,499	1,339	21,724

^a Table No. 1 is continued below.
^b Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

That the enormous activity in traffic, which has been a factor in the explanation of previous bulletins, was still undiminished in the period here reported on, is indicated by the marked increase in casualties to passengers from causes not connected with train accidents (85 now, 58 a year before); for this item undoubtedly contains a proportion larger than others in the table, of accidents which, from the railroad standpoint, are to be classed as unavoidable, and therefore in the long run showing totals more directly proportionate to the number of persons traveling.

Increases are shown in the other principal items (see Table 1*a* below), except item No. 1; but in this connection it is to be borne in mind that Bulletin No. 24 represents a quarter in which the volume of traffic, and consequently the number of casualties, usually is lighter than in either of the other quarters of the year.

As to item No. 1—passengers killed in train accidents—a black record is again presented. Three collisions (Nos. 26, 27, and 30, in Table 2*a*) and one derailment being responsible for 80 deaths in this class, an average of 20 passengers to each of the four accidents. Particulars of these and other notable collisions and derailments are given, following Table 2*a*.

TABLE No. 1*a*.—*Comparison of principal items with last bulletin and with one year back.*

	Bulletin 25.	Bulletin 24.	Bulletin 21.
1. Passengers killed in train accidents.....	110	48	52
2. Passengers killed, all causes.....	195	111	110
3. Employees killed in train accidents.....	236	202	215
4. Employees killed in coupling.....	87	72	81
5. Employees killed, all causes.....	1,144	954	1,072
6. Total passengers and employees killed, all causes.....	1,339	1,065	1,182

The total number of collisions and derailments in the quarter now under review was 4,279 (2,245 collisions and 2,034 derailments), of which 320 collisions and 222 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$3,605,696. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

[NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.]

	Number.	Loss.	Persons killed.	Persons injured.
Collisions, rear.....	508	\$524, 007	31	605
Collisions, butting.....	277	570, 473	124	1, 229
Collisions, trains separating.....	128	52, 848	.....	68
Collisions, miscellaneous.....	1, 332	617, 613	41	843
Total.....	2, 245	1, 765, 541	196	2, 745
Derailments due to defects of roadway, etc.....	411	417, 761	17	601
Derailments due to defects of equipment.....	866	627, 287	16	297
Derailments due to negligence of trainmen, signalmen, etc.....	141	119, 874	17	176
Derailments due to unforeseen obstruction of track, etc.....	87	135, 020	12	122
Derailments due to malicious obstruction of track, etc.....	24	64, 061	7	65
Derailments due to miscellaneous causes.....	506	476, 452	44	528
Total.....	2, 034	1, 840, 165	113	1, 769
Total collisions and derailments.....	4, 279	3, 605, 696	309	4, 514

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE 2a.—*Causes of forty-nine prominent train accidents (Class A).*

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.				
1	R	F and F.....	0	0	\$2, 300	83	Engineman on duty 17 hours, and asleep, passed automatic block signal set against him; also passed flagman.
2	B	P and F.....	0	23	2, 000	12	Freight train wrongfully admitted to block section; struck passenger train standing at station. In freight, part of air brakes had been cut off, but trainmen had not discovered the fact; had not tested at proper time.
3	R	F and F.....	0	3	3, 252	96	Engineman asleep; approached station at uncontrollable speed, 2 a. m.
4	M	P and F.....	0	4	2, 900	4	Error in dispatcher's order, two words, including name of station, written twice and thus wrongfully repeated by receiving operator. Dispatcher did not detect error when order was repeated.
5	B	F and F.....	5	6	4, 300	85	Approached station at uncontrollable speed. Victims were employees in caboose of work train.
6	B	P and F.....	8	32	4, 600	7	Engine, in charge of hostler, encroached on time of passenger train; eight passengers killed. Hostler had been misinformed as to lateness of passenger train by operator, who had misread an order.

TABLE 2a.—Causes of forty-nine prominent train accidents (Class A)—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
7	R	F and F.....	0	0	4,800	2	Failure of air brakes, angle cock having been shut between first and second engines of "double-header." Angle-cock lever had been moved by cylinder-cock rod, which pressed against it.
8	R	F and F.....	0	0	5,000	101	False clear telegraph block signal.
9	B	F and F.....	0	1	5,550	52	Dispatcher's order copied incorrectly (1,384 for 1,382); was repeated correctly.
10	M	F and F.....	2	8	6,500	54	Freight, waiting on side track, 2 a. m.; men failed to see green signals carried by passing train; signals dim; train on side track 50 feet from main track; not seen by men on passing train and whistle signal consequently not given.
11	B	F and F.....	0	6	7,460	14	Careless management of block signals and failure to deliver meeting order. Responsible operators had had only five months' experience.
12	B	P and P.....	1	11	7,700	99	Engineman forgot meeting point (Sunday schedule, though he had been cautioned by conductor at beginning of trip. Engineman killed.
13	R	F and F.....	0	2	7,704	88	Engineman, on duty 17 hours in last 19 hours, fell asleep and passed automatic block signal set against him; also passed flagman.
14	B	P and P.....	1	7	8,200	10	Dispatcher completed meeting order to inferior train before properly placing order for superior train.
15	B	F and F.....	1	2	9,300	58	Failure to deliver meeting order. Operator, without leave, had put substitute in his place for 30 minutes and had not properly informed substitute about the order.
16	R	P and F.....	1	2	10,000	91	Freight train, 1 a. m., unexpectedly stopped. was not protected by flagman.
17	B	F and F.....	4	4	10,185	51	Conductor and engineman of extra freight overlooked schedule of regular train.
18	M	F and F.....	1	2	11,350	92	Cars escaped from yard and ran on main track; had been left unsecured by negligent switchmen.
19	B	P and F.....	3	53	11,433	17	Freight train ran over misplaced switch and through crossover track into passenger train.
20	M	F and F.....	0	0	12,963	8	Collision at crossover; train approached station at uncontrollable speed.
21	R	F and F.....	0	2	13,710	18	Runaway on 3 per cent grade. Carelessness in starting from side track on grade, three trainmen being on the ground instead of at their posts on the cars or engine.
22	B	F and F.....	4	5	14,201	86	Operator (in service one month) accepted meeting order after train had passed, having been asleep.
23	R	F and F.....	0	5	14,350	40	Runaway on 1½ per cent grade; insufficient brake power. In taking on cars trainmen had neglected to connect and test air brakes.
24	B	P and F.....	3	27	15,000	59	Conductor and engineman forgot meeting order.
25	M	P and P.....	0	36	16,000	95	Approached station at uncontrollable speed. (See text below.)
26	B	P and F.....	10	32	16,496	87	Operator turned east-bound passenger train to wrong diverging track. Six passengers killed. (See text below.)
27	B	P and F.....	30	105	17,785	6	Conductor and engineman of freight misread dispatcher's order. (See text below.)
28	B	F and F.....	0	2	18,558	97	Meeting order not delivered. (See text below.)
29	B	F and F.....	1	7	24,600	3	Freight ran past appointed meeting station.
30	B	P and F.....	26	33	25,000	89	Mistake in dispatcher's order. (See text below.)
31	B	P and P.....	4	4	40,000	57	Meeting order not delivered. (See text below.)
Total.....			105	424	354,857		

TABLE 2a.—Causes of forty-nine prominent train accidents (Class A)—Continued.

DERAILMENTS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	D	P.....	5	13	\$1,125	122	Failure of 100-pound rail, nine years old; cracked between ball and web. Four passengers killed.
2	D	P.....	0	0	5,448	35	Interlocked switch thrown under moving train, detector bar having failed. Bar one-half inch thick, 2½ inches wide, was supported by "motion-plate" clips.
3	D	P.....	3	8	7,300	29	Cause unexplained. Engine running tender first. Two passengers killed.
4	D	P.....	1	8	8,223	79	Excessive speed on 10-degree curve.
5	D	F.....	3	0	9,370	112	Runaway on steep grade; air pump had stopped. Engineman (killed) was capable and experienced.
6	D	F.....	0	0	10,176	111	Spreading of rails.
7	D	P.....	0	9	10,450	75	Track distorted by solar heat. Track inspected one hour before.
8	D	P.....	14	19	13,700	116	Unexplained. (See text below.)
9	D	F.....	0	0	14,660	78	Runaway of 38 freight cars; had been left on side track without being secured by hand brakes. Cars ran 27 miles and were then sidetracked by telegraphic order, and all were wrecked.
10	D	P.....	0	31	16,000	82	Unexplained.
11	D	P.....	0	18	18,200	24	Misplaced switch.
12	D	P.....	5	27	18,800	81	Passenger train wrecked by running into parts of cars which had fallen upon its track in consequence of the derailment of a freight train on an adjoining track, caused by a broken flange.
13	D	P.....	0	9	23,000	63	Ran into hand car left on track by careless repairmen.
14	D	F.....	3	5	25,100	106	Runaway on steep grade; bad management of air brakes.
15	D	F.....	0	0	32,200	62	Runaway of freight cars left standing on grade without hand brakes being set.
16	D	P.....	0	25	45,100	120	Rail turned over, tie plates having been broken. The rail, when no weight rested on it, stood in perfect position, though probably it had been loose some little time. Track walker had just inspected the line.
17	D	P.....	2	13	56,000	124	Breakage of flange of wheel of tender.
18	D	P.....	0	32	63,000	114	Broken rail. Train running 50 miles an hour on straight line. Rail, 12 years old, had interior defect. Greater part of loss due to fire from explosion of gas tank of sleeping car.
Total.....			36	217	377,852		
Total collisions and derailments.....			141	641	732,709		

Collision No. 27 was between a westbound local freight train and an eastbound passenger excursion train of 11 cars. Twenty-eight passengers and 2 trainmen were killed and 102 passengers and 3 trainmen were injured. The freight train was running about 30 miles an hour and the passenger train about 40 miles an hour immediately before the collision. Both engines, 6 passenger cars, and 3 freight cars were wrecked. The men in charge of the freight train misread an order which they had received from the dispatcher giving them the time at which the excursion train was due at the several stations. This order read:

Salem..... 9.10
Plymouth..... 9.25

But these men read it "Salem.....9.25," and therefore allowed themselves fifteen minutes more time in which to reach Salem than

they could rightfully do; consequently they met the excursion train $1\frac{1}{2}$ miles before reaching Salem. The figures "9.10" were not exactly opposite the word Salem, and this appears to be the explanation of the mistake in reading, though the operator in writing the order had made dotted lines from the name of the station to the figures showing the time, in order to insure a correct reading. In consequence of the figures being nearer the top of the sheet, as related to the words, these lines inclined upward from left to right. The engineman did not read the order aloud to the conductor, nor was it read either by the fireman or by any brakeman, though all these readings are required by the company's rules. The station operator who delivered the order (but who was not the same one who had written it) says that the conductor in his presence read the order correctly.

Butting collision No. 30, between eastbound passenger train No. 30 and a westbound freight train about 4 o'clock on a very foggy morning, killing 26 and injuring 33 persons, was due to an error in sending or receiving the number designating one of the trains in a dispatcher's order. Two passenger trains running in the same direction, Nos. 30 and 34, being behind time, the train dispatcher sent an order to the freight train giving it notice that the passenger trains would be a certain number of minutes late, respectively, between certain stations, thus permitting the freight to continue on its journey to meeting points different from those at which it would have met the passenger trains normally. One order was sent and delivered correctly. A second order, dealing with only one of the two passenger trains, was wrong. As delivered, it named the passenger train as "No. 30 thirty;" but it should have read "No. 34 thirty-four." Being read "30," it gave a wrong number of minutes as regards that train, and this led to the collision. Train No. 30 was represented to be an hour and ten minutes late, when, in fact, it was but forty minutes late. A number of other orders were sent about the same time, so that the dispatcher had both these train numbers in his mind; and the State railroad commissioners, who investigated the case, believe that the preponderance of evidence is in favor of the theory that the dispatcher made the error in sending; but, so far as can be learned from the records at the dispatcher's office and in the station telegraph office, and the testimony of the dispatcher and of the station operator, the officers of the road say that it is impossible to decide which of these two persons committed the error. The operator wrote "No. 30 thirty," and declares that in repeating the order to the dispatcher he sent in the same way that he had written. The dispatcher, on the other hand, declares that he sent "No. 34 thirty-four," and that the operator in repeating wrote "No. 34 thirty-four." The operator had been in the service of the company at different stations for twenty-three years, and the dispatcher

had served as dispatcher six years. The company gives good reputations to both of these men.

Derailment No. 8, causing the death of 14 persons and the injury of 19, is reported as due to some cause undiscovered. The train was running about 35 miles an hour on a 3-degree curve, and it was thrown off the track just as it was passing a station. The cars in the front portion of the train ran to one side and were crushed against a locomotive standing on a side track, and the baggage car, reported as one of strong construction, penetrated the first passenger car—a smoking car—and killed or injured every person in this car, all the deaths being of persons riding in this car. The track was reported as in excellent condition, the rails weighing 80 pounds per yard. The weight of the engine was 44 tons.

Collision No. 26, causing the death of 10 persons and the injury of 32, was due to a misplaced switch. The telegraph operator at S. turned an eastbound passenger train coming from single track to the left hand instead of the right hand of the two main tracks extending eastward from S.; that is, to the westbound track; and, after proceeding about three-fourths of a mile on the westbound track, this train collided with a westbound freight train. Under a general rule it is allowable for the operator at S. to send trains eastward to B. on the westbound track, and therefore the engineman took it for granted that the operator, in turning the train to the left-hand track, was acting in accordance with instructions from the dispatcher; but in point of fact no such order had been given, and the operator had given a "proceed" signal under the mistaken assumption that the switch was set for the eastbound track. As soon as the train had passed his office he endeavored to telegraph to B., the next station east, and prevent the collision, but he was too late to do so. This operator had been in service at this office fifteen days and in the service of the company five months seventeen days. He had been on duty twenty hours, fifty minutes.

Collision No. 25 was due to the carelessness of an engineman in not keeping in mind a detail of a meeting order. Northbound train No. 38 and southbound train No. 35 were to meet at C. at about 10 p. m. The order required the southbound train to enter the side track at a certain switch, and the train was passing from the main line to the siding at this point when it was struck in the side by the northbound train. The engineman of the northbound, contrary to the terms of the order, assumed that the southbound was to enter the side track at another switch, and, although he saw it approaching, he thought that it was already on the side track. The northbound engine and four cars were badly damaged, and the wreck took fire from an explosion of gas in the tank of one of the passenger cars. Of the total damage of \$16,000, more than one-half is estimated as having been

due to the fire, which includes the damage to five freight cars standing on the side track.

Collision No. 28 between a northbound and a southbound freight train was due principally to the failure of an operator to deliver a meeting order. He accepted the order from the dispatcher after the freight train to which it was addressed had gone beyond his control. This operator, at L., had delivered a meeting order to two sections of a northbound regular freight train, but on account of damage to one of the engines, which necessitated changing them, so that the engine and engineman of the second train were assigned to the first one, both trains were delayed about an hour. In consequence of this delay, the dispatcher sent a second order changing the meeting point, but this later order was not delivered. The men of both the freight trains claim that, just before departing, they asked the operator if he had further orders for them, and that he replied that he had none. The operator denies this conversation. The operator, a few minutes after receiving the second order, was relieved by the night operator, and in transferring his orders to the nightman, informed him that the trainmen would come back to the office to sign for the order. This they did not do. The train dispatcher is also held blameworthy for allowing the northbound train to pass another station 10 miles farther north, about an hour afterwards, without taking measures to stop it.

Collision No. 31, causing the death of 2 passengers and 2 trainmen, was due to errors in the writing of a telegraphic order, leading to its nondelivery, thus allowing a train to run past the meeting point fixed by the order. The order was to the conductor and engineman of train No. 412, and the train to be met was No. 611. In copying the order, the last number, 611, was copied 411. The order was received by the manager of the telegraph office, in place of Operator B., who usually receives such orders, but who was temporarily out of the office. Just as the manager had finished, B. returned and took up the work of repeating the order to the dispatcher. When he reached the last line and sent "411," the dispatcher broke him and said "for 611." The operator acknowledged the correction but he did not properly correct his manuscript. He thought it was the address of the order (412) which was to be changed to read 611. After acknowledging the correction he sent the conductor's signature. An apparently correct repetition having thus been received at the dispatcher's office, the dispatcher authorized the order to be delivered to the inferior train at another station, so that it proceeded and met train 412. While the order was being written and repeated, the conductor of train 412 was standing at the window waiting for whatever orders the operator might have to give him; but he had not signed this order, and the operator committed a gross breach of the rules in telegraphing the con-

ductor's name before the conductor had signed the order. After finishing with the dispatcher, Operator B. gave to the waiting conductor two other orders, but omitted to deliver the one which he had just repeated. Operator B. decamped and would not appear at the investigation of the accident which was held by the superintendent. He wrote, however, to the superintendent of telegraph, claiming that he had not sent the conductor's signature over the wire. In the wastebasket of the office there was found the original order, with the address of the order, "To train 412," changed to read "To train 411," while on the table was a new order addressed to 411 which, evidently, Operator B. had made in place of the original, on the assumption that the correction which he had received from the dispatcher referred, not to the train number at the end of the order, but to that in the address.

TABLE NO. 3.—Details of Table No. 1—Causes of accidents to employees in coupling and uncoupling cars.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		30		23		47		
2	Adjusting coupler, cars accidentally started.....		10		2	2	13	1	1
3	Careless manipulation of uncoupling lever.....		8		2		12		
4	Cars not equipped with automatic coupler.....		3		3	1	1		3
5	Coupler broken, using link and pin or chain.....		7		4	1	8		2
6	Coupling damaged cars.....	5	8	4	7	5	22	1	3
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....	1	6		4	1	8		
8	Coupling with chain or other emergency appliance because of uneven track.....		1						
9	Coupling or uncoupling safety chains.....		5		4		3		1
10	Fingers or hand caught between uncoupling lever and body of car.....		50		40		108		6
11	Uncoupling without using lever (unnecessary).....		9	1	5	2	15		
12	Uncoupling without using lever, uncoupling lever not in working order.....	2	37	1	26	2	59		
13	Foot caught in frog, switch, or guard rail.....		5	2	3	3	8		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....		19	1	19		22		2
15	Opening knuckle when cars were near together, engine accidentally started.....		2	1	2		7	1	1
16	Opening knuckle, part of defective coupler fell on foot.....		6		2		4		
17	Opening knuckle, lost footing.....	2	9	4	6	1	10		2
18	Riding on car to uncouple, slipped off.....		8		7	2	9		
19	Struck by object at side of track.....		1		5		8		
20	Caught by unexpected movement of car, due to slack running in.....	5	19	1	15	7	22		2
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals..		2	1	1		1		1
22	Uncoupling moving cars and lost footing.....	2	6	1	5	3	15	1	
23	Parts hard to move, causing delay.....		8		6		12		
24	Went between cars unnecessarily and contrary to rule.....	4	14	1	12	3	22		5
25	Hand caught between projecting load and end of next car.....		3		1		8		
26	No witnesses (fatal injury).....	1		5		1			
27	Other causes (see detailed list below).....		3		4		8		
28	Unexplained.....	1	9	2	4	1	3		1
	Total.....	23	288	25	212	35	455	4	31

Details of injuries included in Table 3, subclass 27.

- J. 1. Block from under car flew up striking mouth.
- J. 2. Torpedo exploded and cut leg.
- J. 3. Air hose struck kneecap.
- J. 4. Knuckle block caught finger.
- J. 5. Lump of coal fell off tank on head.
- J. 6. Lump of coal fell off tender crushing toe.
- J. 7. Brake wheel came off car and fell on foot.
- A. 1. Stepped on nail.
- A. 2. Lump of ore fell from car striking head.
- A. 3. Stepped on nail.
- A. 4. Cut on head by timber falling from car.
- S. 1. Stepped on nail.
- S. 2. Scalded by steam from hose.
- S. 3. Air hose flew up cutting chin.
- S. 4. Struck by broken plank.

TABLE 3A.—Nature of injuries to employees in coupling and uncoupling cars.

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other em- ployees.
Loss of feet.....	5	1	8	.....
Loss of legs.....	2	.....	2	1
Loss of arms.....	4	1	4	.....
Loss of hands.....	1	1	1	.....
Loss of fingers.....	14	10	10	3
Loss of toes.....	1	2	4	.....
Fractured skull.....	.....	2	.....	.....
Fractured leg.....	3	1	3	.....
Fractured arm.....	4	3	7	1
Fractured collar bone or ribs.....	5	4	4	3
Fractured other bones.....	9	7	10	.....
Contusion of head or body.....	25	22	54	7
Contusion or laceration of feet.....	29	25	49	1
Contusion or laceration of toes.....	10	2	5	.....
Contusion or laceration of legs.....	9	5	16	.....
Contusion or laceration of arms.....	6	7	24	.....
Contusion or laceration of hands.....	47	38	74	5
Contusion or laceration of fingers.....	92	62	148	8
Dislocation.....	2	4	1	2
Internal injuries.....	6	5	4	.....
Sprains.....	12	4	19	.....
Shock.....	.....	.....	.....	.....
Miscellaneous.....	2	6	8	.....
Total injuries.....	288	212	455	31
Killed.....	23	25	35	4
Total killed and injured.....	311	237	490	35

RECAPITULATION.

Total killed.....	87
Total injured.....	986
Total killed and injured.....	1,073

TABLE No. 4.—*Details of Table No. 1.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C 6	Fell from roof of box car by reason of—								
	1 Defect in car.....		7		1		6		1
	2 Ice or snow.....								
	3 Parting of train.....	3	23		7		6		
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in sub-class 3.....	6	67	5	49	6	97	2	15
	5 While setting brakes.....	3	29	2	28	2	47		4
	Fell from—								
	6 Coal car.....	2	11	3	7		10	4	11
	7 Freight car other than box or coal car.....	8	51	1	24	3	18	6	23
	8 Engine or tender.....	14	168	6	72	6	55	4	16
	9 Passenger car.....	1	12	1	3		3	1	5
C 7	10 Engines, tenders, or cars (all kinds) not in motion.....	1	72	1	41		17	3	64
	11 Miscellaneous causes.....	13	315	3	129	10	258	5	71
	12 Not clearly explained.....	17	64	5	15	9	48	2	16
	13 Slipped getting on moving trains or cars.....	5	154	2	85	5	78	9	67
	14 Jumping off moving trains.....	2	139	3	91	2	120	8	78
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	2	63	1	9	1	24	1	4
	16 Fell from engines or cars by reason of defective hand holds and sill steps.....		52	1	29		56		3
	17 Getting on or off moving engine.....	6	200	6	98	6	119	8	47
	18 Caught in frog, guard rail, or switch.....		14		12		5	1	1
	Total.....	83	1,441	40	700	50	967	54	426

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents.

The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 17 records one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring at 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches, and a collision which was due to failure of "controlled manual" block signal working.

Bulletin No. 18 shows total casualties much larger than in the preceding quarters, due largely, no doubt, to an enormous increase in traffic. Many accidents are reported in which the men had been on duty excessively long hours. One collision, killing 17 persons, was due to the error of an engineman of five months' experience, who ran past five warning signals. Another collision, killing 10 persons, was due to the failure of the men in charge of a freight train to identify opposing passenger trains. One derailment of a passenger train, killing 13 persons, was reported as due to some cause that could not be discovered.

Bulletin No. 19 is like Bulletin 18 in showing a large number of casualties. One butting collision, due to failure of train dispatching, caused 34 deaths and 24 injuries and \$50,000 damages, besides the damages for deaths and injuries of persons. One collision was due to the negligence of men who had been worked flagrantly long hours. Particulars are given of a number of collisions due to complicated and unusual causes.

Bulletin No. 20 shows total deaths greater than in the corresponding quarter of the previous year, but the number of passengers and employees killed in train accidents was considerably smaller. The most serious accident in this bulletin was a butting collision of passenger trains, due to misinterpretation of a dispatcher's order by a pilot; 10 persons killed, 38 injured. One derailment, unexplained, train running slowly, caused 9 deaths and 18 injuries.

Bulletin No. 21 contains the record of only one train accident—a collision—in which more than 10 persons were killed, but the totals of casualties of all classes are large, no improvement being shown over preceding quarters. Number of passengers killed in train accidents, 52. One collision, killing 17 and injuring 56, was due to confusion of telegraphic orders; one derailment, killing 9 and injuring 43, was at a misplaced switch, and another, killing 7 and injuring 40, was due to excessive speed.

Bulletin No. 22 shows 180 passengers killed in train accidents—a number larger than that in any other bulletin except No. 13. One rear collision in the District of Columbia caused the death of 43 passengers and the injury of 63. A butting collision killed 43 persons and injured 155, the bodies of the killed being consumed by fire. In the derailment of a passenger train at a drawbridge 57 persons were killed and 36 injured.

Bulletin No. 23 shows 126 passengers killed in train accidents. It contains the record of two collisions, killing 41 persons, and two derailments, killing the same number. The number of employees killed in coupling accidents is 25 per cent less than in the last preceding quarter.

Bulletin No. 24, though representing that quarter of the year which is usually the lightest in traffic, showed all of the principal totals of casualties larger than in the same quarter of the year preceding, and the number of passengers killed in train accidents was very much larger. One derailment killed 33 persons and one collision 8. The tables for the year ending June 30, 1907, showed heavy increases in all items except accidents in car coupling and from striking against overhead obstructions, and the number of passengers killed and injured in collisions and derailments showed an alarming increase, the number of killed in this class being 17 per cent higher than the very large total reported in the year ending June 30, 1905. A condensed list is given of 10 prominent accidents in the year ending June 30, 1907, to which are charged an aggregate of 291 deaths.

^a For notes on Bulletins 1 to 16, inclusive, see Bulletin No. 17.

ACCIDENT BULLETIN NO. 26

Showing

Collisions and Derailments of Trains

and

Casualties to Persons

during the months of

October, November, and December, 1907

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



THE INTERSTATE COMMERCE COMMISSION.

MARTIN A. KNAPP, of New York, Chairman.

JUDSON C. CLEMENTS, of Georgia.

CHARLES A. PROUTY, of Vermont.

FRANCIS M. COCKRELL, of Missouri.

FRANKLIN K. LANE, of California.

EDGAR E. CLARK, of Iowa.

JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 26.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING DECEMBER 31, 1907.

The number of persons killed in train accidents during the months of October, November, and December, 1907, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 220 and of injured 4,187. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off cars, etc., bring the total number of casualties up to 20,458 (1,092 killed and 19,366 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.^a

TABLE No. 1.—*Casualties to persons, October, November, and December, 1907.*^{b c}

	Passen- gers (a and b).		Persons carried un- der agree- ment or contract (bb).		Total (a, b, and bb).		Trainmen.		Train- men in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	10	1,358	4	119	14	1,477	77	664	11	238
Derailments.....	5	516	2	113	7	629	48	352	6	44
Miscellaneous train accidents, including lo- comotive boiler explosions.....		15		4		19	16	254	1	55
Total train accidents.....	15	1,889	6	236	21	2,125	141	1,270	18	337
Coupling or uncoupling.....							22	288	13	175
While doing other work about trains or while attending switches.....							16	2,403	15	805
Coming in contact with overhead bridges, structures at side of track, etc.....		4		1		5	16	212	2	91
Falling from cars or engines or while get- ting on or off.....	35	552	1	16	36	568	86	1,385	24	665
Other causes.....	21	559	3	67	24	626	51	221	34	140
Total (other than train accidents)...	56	1,115	4	84	60	1,199	191	4,509	88	1,876
Total all classes.....	71	3,004	10	320	81	3,324	332	5,779	106	2,213

^a The casualties to passengers have been divided into three classes. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight.

^b Table No. 1 is continued on next page.

^c Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

TABLE NO. 1.—*Casualties to persons, October, November, and December, 1907—Cont'd.*

	Yard trainmen (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	10	159	7	127	105	1,188	119	2,665
Derailments.....	10	77	7	46	71	519	78	1,148
Miscellaneous train accidents, including locomotive boiler explosions.....	2	29	4	17	23	355	23	374
Total train accidents.....	22	265	18	190	199	2,062	220	4,187
Coupling or uncoupling.....	40	466	2	16	77	945	77	945
While doing other work about trains or while attending switches.....	15	919	18	644	64	4,771	64	4,771
Coming in contact with overhead bridges, structures at side of track, etc.....	4	107	4	12	26	422	26	427
Falling from cars or engines or while getting on or off.....	49	1,019	22	326	181	3,395	217	3,963
Other causes.....	37	126	342	3,960	464	4,447	488	5,073
Total (other than train accidents)...	145	2,637	388	4,958	812	13,980	872	15,179
Total all classes.....	167	2,902	406	5,148	1,011	16,042	1,092	19,366

This bulletin shows marked decreases in nearly every item of Table No. 1, reflecting the marked falling off in traffic which began last autumn on practically every railroad in the country. The largest proportional decrease, that in the number of passengers killed in train accidents, is in an item which is not so directly proportionate to the volume of traffic; this for reasons which have been noticed in previous bulletins; while the fatal accidents to passengers from other causes—largely from their own negligence or want of caution—have not decreased (61 now, 54 a year before). This probably indicates that the decrease in the total number of passengers traveling was not large; while, on the other hand, the diminution in the number or the severity of accidents affecting only trainmen undoubtedly is due, not alone to a falling off in traffic, but also to the diminished pressure under which the trainmen do their work. With the reduction in the volume of traffic there has been less of overwork and excessive hours, and also probably a weeding out of the less competent men.

The list of train accidents notable by their magnitude, heretofore of considerable length in each quarter, is now happily much reduced, the chief items in Table 2a being collisions 1, 9, and 11. Derailment No. 1, though comparatively of small magnitude, is noticeable as being one of a new class. It was a derailment of an electric car, running alone. Electric railroads doing interstate business have been so few that hitherto their reports have not been prominent in the accident records. Cars running alone are subject to accidents

from defective brake apparatus which in trains of cars would not cause serious trouble.

Notwithstanding the improvement as regards results, the causes of accidents, as shown in Table 2a, are as varied as ever, and demand no less serious consideration than in the past. In the amount of damage done to cars and engines it is also observable that there is no important decrease, as compared with the corresponding quarter in the preceding year.

TABLE No. 1a.—Comparison of principal items with last bulletin and with one year back.

	Bulletin 26.	Bulletin 25.	Bulletin 22.
1. Passengers killed in train accidents.....	21	110	180
2. Passengers killed, all causes.....	81	195	234
3. Employees killed in train accidents.....	199	236	294
4. Employees killed in coupling.....	77	87	84
5. Employees killed, all causes.....	1,011	1,144	1,196
6. Total passengers and employees killed, all causes.....	1,092	1,339	1,430

The total number of collisions and derailments in the quarter now under review was 3,964 (2,094 collisions and 1,870 derailments), of which 337 collisions and 202 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,962,470. Given more in detail, these facts appear as below:

TABLE No. 2.—Collisions and derailments, October, November, and December, 1907.

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	508	\$472,847	39	705
Collisions, butting.....	264	474,144	46	1,051
Collisions, train separating.....	166	58,800	2	88
Collisions, miscellaneous.....	1,156	530,863	32	821
Total.....	2,094	1,536,723	119	2,665
Derailments due to defects of roadway, etc.....	404	243,272	10	299
Derailments due to defects of equipment.....	819	650,538	9	224
Derailments due to negligence of trainmen, signalmen, etc..	129	86,874	9	85
Derailments due to unforeseen obstruction of track, etc....	84	92,720	17	169
Derailments due to malicious obstruction of track, etc.....	23	27,521	7	38
Derailments due to miscellaneous causes.....	411	324,822	26	333
Total.....	1,870	1,425,747	78	1,148
Total collisions and derailments.....	3,964	2,962,470	197	3,813

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE 2a.—Causes of forty-one prominent train accidents (Class A).

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

						Reference to record.	Cause.
1	B	P and F....	5	0	\$2,125	76	Passenger train ran over misplaced switch and into head of freight train standing on side track, dense fog. Man in charge of switch in service only 5 days, but had been employed by this company two years before.
2	B	P and F.....	0	18	2,215	46	Eastbound passenger collided with westbound standing freight. Passenger ordered to run on westbound track; operator wrongfully reported that the freight had cleared that track. It was standing near his cabin, but he thought, or assumed, that it had passed.
3	R	P and F.....	1	2	2,500	71	Engineman (killed) disregarded flag; had been on duty 28 hours.
4	B	P and F.....	2	4	2,500	51	Misplaced switch. Misplaced by brakeman of 7 months' experience; on duty 18 hours 30 minutes.
5	R	F and F....	0	3	2,520	82	Failure to protect standing freight train by flag. Conductor asleep in cab; flagman also in caboose; these men on duty 18 hours 57 minutes; following train had been warned by two torpedoes.
6	R	F and F.....	3	0	3,275	41	Freight standing at water station not protected by flag; 3 men in caboose killed.
7	R	P and P.....	1	4	5,075	5	Block signal (telegraph block system) wrongfully displayed at clear; signalman in service 5 years. (See note in text below.)
8	B	P and F.....	0	11	5,725	20	Conductor held order giving him until 6:15 to reach a certain station; took it for 6:50 and so told engineman. Engineman did not read order; order not shown to fireman or brakeman.
9	R	P and P.....	3	36	5,920	57	Three passengers killed. Passenger train ran past automatic block signal indicating stop and struck passenger train standing at station. Engineman on duty 14 hours 20 minutes.
10	B	P and F.....	1	165	6,042	12	Conductor and engineman of empty engine overlooked schedule of regular passenger train; engineman's experience, 6 months. Engineman depended on conductor; conductor forgot.
11	R	P and P.....	3	22	6,500	68	Three passengers killed; train in yard not protected by flag; other train approached at uncontrollable speed in dense fog.
12	B	P and P....	0	45	6,660	43	Misplaced switch; southbound train ran through cross over in dark tunnel and engineman did not discover that he was on wrong route. Switch not in working condition; had been spiked, but was loosened and turned by employee of contractor without authority.
13	M	P and F....	1	4	6,960	9	Freight approached crossing not under control. (See note in text below.)
14	B	P and F.....	0	10	7,100	75	Order misread by engineman; conductor did not deliver order to engineman in person as required by rule.
15	B	P and F....	1	3	7,927	79	Freight had 1 hour 10 minutes on time of passenger train, conductor and engineman unaccountably calculated 2 hours 10 minutes, though they had read the order aloud.
16	M	F and F....	0	1	9,262	55	Cars ran out of siding at night. Derailing switch 200 feet from fouling point; cars had been left outside of derailing switch.
17	B	P and F....	2	11	9,900	45	Conductor and engineman of freight overlooked schedule of passenger train.

TABLE 2a.—Causes of forty-one prominent train accidents (Class A)—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
18	B	F and F.....	3	2	10,150	7	Cars ran out of side track. Contrary to orders, cars had been left on an unsuitable temporary track. Believed brakes had been maliciously loosened.
19	B	F and F.....	1	1	10,170	13	Northbound train approached station at uncontrollable speed; engineman, experienced, did not manage air brakes properly.
20	B	F and F.....	1	4	10,500	8	Southbound met one northbound train, but men forgot that order specified two trains. Conductor (10 years' experience as brakeman) was on his first trip as conductor.
21	B	F and F.....	2	1	10,800	51	Operator neglected to deliver one of four orders. Conductor accepted other orders knowing his signature had been prematurely and wrongfully sent to dispatcher. Operator in service at this place 12 days.
22	B	P and F.....	3	53	12,400	16	Misplaced switch at meeting point. Brakeman, 8 months' experience, on duty 20 hours 40 minutes; should have closed switch, and claims that he had done so.
23	B	F and F.....	1	2	12,800	4	Disregard of distant and home signals approaching station (2 a. m.). Engineman believed to have been asleep; brakeman in cab also probably asleep; fireman not well acquainted with road.
24	B	P and P.....	1	10	13,650	42	Collision opposite station, both enginemen disobeying rule to approach under control. (See note in text below.)
25	R	F and F.....	0	3	15,780	72	Standing freight not protected by flag; flagman's experience 1 year 6 months. Damage largely due to fire started from broken stove in caboose and from overturned engine.
26	B	F and F.....	1	5	17,000	49	Operator accepted order after train had passed. (See note in text below.)
27	M	F and F.....	0	2	20,700	84	Westbound freight backed through cross over into eastbound freight. Brakeman, in service 2 months, set cross-over switch instead of side-track switch as ordered.
28	B	P and F.....	3	39	45,700	44	Conductor and engineman northbound freight encroached on time of regular southbound passenger train; men on duty 19 hours 52 minutes. They knew that they were on the time of the passenger; detached engine and tried to reach station, evidently depending on possibility of passenger being a little behind time.
Total.....			38	457	271,875		

DERAILMENTS.

1	D	P.....	1	35	\$350	63	Excessive speed on curve due to broken brake beam (electric car running alone).
2	D	F.....	0	3	2,700	29	Runaway on 2.2 per cent descending grade; bad management of air; train pipe leaky; hand brakes not promptly used. Engineman, on duty 28 hours, did not seasonably signal to apply hand brakes.
3	D	P.....	1	13	3,100	32	Accidental obstruction. (Wreck caused by derailment No. 10.)
4	D	F.....	1	0	5,865	35	Excessive speed on curve and steep descending grade; engineman making his first trip on this branch; conductor applied air brakes in caboose, but applied them too suddenly and broke coupling between engine and tender.
5	D	P.....	1	10	7,804	93	Two cars of passenger train blown off track by high wind.
6	D	P.....	0	3	10,287	97	Unknown.
7	D	F.....	0	2	10,400	95	Runaway on descending grade. (See note in text below.)
8	D	F.....	0	2	10,977	65	Mast of steam shovel struck overhead bridge, and bridge was weakened and fell. Height of shovel 19 feet 6½ inches; clearance at bridge had formerly been 19 feet 7 inches, but new and thicker ties had been put in, raising the rails.

TABLE 2a.—Causes of forty-one prominent train accidents (Class A)—Continued.

DERAILMENTS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to en- gines, cars, and roadway.	Reference to record.	Cause.
9	D	P.....	1	12	11,100	57	Accidental obstruction. (Wreck of freight train on adjacent track derailed by shock due to auto- matic application of air brakes. Triple valve on one car too sensitive.)
10	D	F.....	0	0	13,210	31	Broken flange.
11	D	F.....	1	3	16,545	25	Unknown.
12	D	F.....	1	4	17,250	30	Runaway on descending grade. Engineman in serv- ice on this steep grade 2 weeks; 7 years' experi- ence elsewhere; had run 4 trips over this section as learner.
13	D	F.....	0	0	19,950	80	Broken flange.
Total			7	87	129,628		
Total collisions and derailments.			45	544	401,503		

Collision No. 7 was caused by an error of a signalman. The signalman at A allowed a passenger train to leave A for B before a preceding passenger train had reached B. This signalman is 25 years old, and has been employed in that capacity for five years. His explanation is that he was busy setting the switches and signals for switching movements which were going on at his station at the time when he was called upon to give the signal for the passenger train.

Collision No. 13 was at a crossing, a freight train of road A running into the side of a passenger train of road B. One sleeping-car conductor was killed and 4 passengers were injured. The collision occurred at 5:45 a. m. The freight train approached the crossing at uncontrollable speed, either on account of the air pressure in the air-brake system having been excessively reduced, or by reason of defective judgment on the part of the engineman. This freight train had begun its trip without proper inspection, the air brakes not having been tested; and besides this, the rule requiring 75 per cent of the train to be air-braked had been disobeyed, only 22 cars out of 34 having their air brakes connected to the engine. Road A asserts that the passenger train did not comply with the law requiring a full stop before passing over this crossing, and that if this stop had been made the collision would not have happened. The men in charge of the other train declare that they had made the stop. The conductor of the freight train had been on duty 21 hours and the engineman 13 hours; the experience of the conductor, as such, was 5 months, and of the engineman 2 years and 4 months.

Collision No. 24 was between a regular westbound and a regular eastbound passenger train, and it occurred exactly opposite a block-signal station. According to the rule, both trains should have approached the block-signal station with speed under such control that a stop could be made before reaching the signal in case it was not clear. It is stated in the report that the block signal was obscured by fog and also by smoke from an engine standing nearby on a side track.

Collision No. 26, a butting collision between freight trains at 9:36 p. m., and causing the death of a fireman, was due to the error of a telegraph operator, 19 years of age, who had been in the service of the road 2 months, though, according to the report, he had had 4 years' experience as an operator. An order having been sent to this operator for train No. 6 and it having become desirable to change this order, the dispatcher asked the operator if the train had passed, and was told in reply that it had not, whereupon he sent an order restricting the right of train No. 6. It appears that when the dispatcher asked his question the operator looked out of his window and saw the headlight of a locomotive and took it for train No. 6, but afterwards found that No. 6 had already passed and that the light was that of a switching engine. Train No. 6 had passed this station some minutes ahead of time, this having been authorized by the dispatcher.

Derailment No. 7 was due to the mismanagement of the air brakes, a heavy freight train becoming uncontrollable on a steep descending grade. The train had two engines. The leading engineman is held responsible, having neglected to use "straight air" to apply the brakes when he found the train was eluding control; and the engineman of the helping engine is held at fault for not having been watchful so as to take an opportunity to recharge the "train line" (air pipes and cylinders) and apply the brakes. The leading engineman had been in the service on this division only 3 months, but is reported as having had one year's experience elsewhere. He had been on duty 21 hours, with 5 hours' intermission. The other engineman had been on duty 17 hours, with 5 hours' intermission.

TABLE NO. 3.—*Details of Table No. 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		24		17		31		1
2	Adjusting coupler, cars accidentally started.....		10		6	2	14		
3	Careless manipulation of uncoupling lever.....		3		1		9		2
4	Cars not equipped with automatic coupler.....		2				3		1
5	Coupler broken, using link and pin or chain.....		6	1			5		
6	Coupling damaged cars.....	3	9		12	4	26		1
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		3		3		10		
8	Coupling with chain or other emergency appliance because of uneven track.....				1				
9	Coupling or uncoupling safety chains.....	1	1		1		6		
10	Fingers or hand caught between uncoupling lever and body of car.....	1	63		33		91		2
11	Uncoupling without using lever (unnecessary).....		10	1	2		16		
12	Uncoupling without using lever, uncoupling lever not in working order.....		39	1	24	2	50		1
13	Foot caught in frog, switch, or guard rail.....	1	2		2	7	6		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	2	28		11	4	33		1
15	Opening knuckle when cars were near together, engine accidentally started.....		3		1	1	7		
16	Opening knuckle, part of defective coupler fell on foot.....		6		3		7		
17	Opening knuckle, lost footing.....		9		11	7	9		
18	Riding on car to uncouple, slipped off.....	2	3		3	2	7		
19	Struck by object at side of track.....	2	6		2		11		
20	Caught by unexpected movement of car, due to slack running in.....	5	17		12	3	27		3
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....		4		3		6		1
22	Uncoupling moving cars and lost footing.....		8	3	3	1	34		1
23	Parts hard to move, causing delay.....		4		6		10		
24	Went between cars unnecessarily and contrary to rule.....	2	18	2	13	5	31		2
25	Hand caught between projecting load and end of next car.....		2		3		5		
26	No witness (fatal injury).....	3		5		2		2	
27	Other causes (see detailed list below).....		6		1		11		
28	Unexplained.....		2		1		1		
	Total.....	22	288	13	175	40	466	2	16

Details of injuries included in Table 3, subclass 27.

- O. 1. Adjusting knuckle; ties rolled off car.
O. 2. Piece of coal fell from car on foot.
O. 3. Steel billet fell on foot..
O. 4. Stake on flat car broke and struck hand.
O. 5. Wheel ran over piece timber, which flew up cutting eye and nose.
O. 6. Stepped on nail.
O. 7. Stepped on sharp piece of steel.
N. 1. Stepped in ditch, spraining foot.
N. 2. Brake staff fell from car on head.
N. 3. Torpedo exploded and cut neck.
N. 4. Stepped on nail.
N. 5. Stepped on spike, spraining ankle.
N. 6. Air hose flew up, striking nose.
D. 1. Adjusting knuckle; caught hand.
D. 2. Air hose burst, striking hand.
D. 3. Glove caught on drawbar; finger cut off.
D. 4. Opening knuckle, caught thumb.
D. 5. Fell off bridge.

TABLE 3A.—Nature of injuries to employees in coupling and uncoupling cars.

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other employees.
Loss of feet.....	2	5	5	1
Loss of legs.....	5	2	1	.....
Loss of arms.....	3	2	3	1
Loss of hands.....	2	1	2	1
Loss of fingers.....	17	7	13	1
Loss of toes.....	2	1	2	.....
Fractured skull.....	.....	.....	.....	.....
Fractured leg.....	.....	3	5	.....
Fractured arm.....	4	11	10	.....
Fractured collar bone or ribs.....	8	3	9	1
Fractured other bones.....	8	4	11	1
Contusion of head or body.....	26	17	68	3
Contusion or laceration of feet.....	23	14	42	1
Contusion or laceration of toes.....	5	2	8	1
Contusion or laceration of legs.....	9	6	31	.....
Contusion or laceration of arms.....	16	11	21	1
Contusion or laceration of hands.....	47	31	55	.....
Contusion or laceration of fingers.....	98	43	136	2
Dislocation.....	1	1	2	1
Internal injuries.....	1	4	6	1
Sprains.....	7	4	28	.....
Shock.....	.....	.....	.....	.....
Miscellaneous.....	4	3	8	.....
Total injuries.....	288	175	466	16
Killed.....	22	13	40	2
Total killed and injured.....	310	198	506	18

RECAPITULATION.

Total killed.....	77
Total injured.....	945
Total killed and injured.....	1,022

TABLE No. 4.—Details of Table No. 1.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	.....	4	.....	4	.....	10	.....	1
	2 Ice or snow.....	1	9	.....	3	.....	7	.....	.....
	3 Parting of train.....	2	28	.....	6	1	6	.....	1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in sub-class 3.....	3	64	.....	26	8	105	1	8
	5 While setting brakes.....	3	52	2	23	3	70	.....	3
	Fell from—								
	6 Coal car.....	1	15	2	6	1	8	2	2
	7 Freight car other than box or coal car.....	4	49	2	23	5	20	1	20
	8 Engine or tender.....	20	164	4	83	5	69	1	12
C7	9 Passenger car.....	1	11	.....	5	.....	3	.....	1
	10 Engines, tenders, or cars (all kinds) not in motion.....	.....	80	.....	51	.....	25	.....	53
	11 Miscellaneous causes.....	18	264	5	100	5	244	3	67
	12 Not clearly explained.....	14	70	1	14	8	45	2	13
	13 Slipped getting on moving trains or cars.....	7	112	3	51	2	77	5	36
	14 Jumping off moving trains.....	.....	163	.....	90	1	114	3	53
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	.....	47	.....	16	1	18	.....	3
	16 Fell from engines or cars by reason of defective handholds and sill steps.....	1	40	1	32	.....	48	.....	3
	17 Getting on or off moving engine.....	11	202	4	119	9	144	4	48
	18 Caught in frog, guard rail, or switch.....	.....	11	.....	13	.....	6	.....	2
Total.....		86	1,385	24	665	49	1,019	22	326

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A), showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 17 records one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring at 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches, and a collision which was due to failure of "controlled manual" block signal working.

Bulletin No. 18 shows total casualties much larger than in the preceding quarters, due largely, no doubt, to an enormous increase in traffic. Many accidents are reported in which the men had been on duty excessively long hours. One collision, killing 17 persons, was due to the error of an engineman of five months' experience, who ran past five warning signals. Another collision, killing 10 persons, was due to the failure of the men in charge of a freight train to identify opposing passenger trains. One derailment of a passenger train, killing 13 persons, was reported as due to some cause that could not be discovered.

Bulletin No. 19 is like Bulletin 18 in showing a large number of casualties. One butting collision, due to failure of train dispatching, caused 34 deaths and 24 injuries and \$50,000 damages, besides the damages for deaths and injuries of persons. One collision was due to the negligence of men who had been worked flagrantly long hours. Particulars are given of a number of collisions due to complicated and unusual causes.

^a For notes on Bulletins 1-16, see Bulletin No. 17.

Bulletin No. 20 shows total deaths greater than in the corresponding quarter of the previous year, but the number of passengers and employees killed in train accidents was considerably smaller. The most serious accident in this bulletin was a butting collision of passenger trains, due to misinterpretation of a dispatcher's order by a pilot; 10 persons killed, 38 injured. One derailment, unexplained, train running slowly, caused 9 deaths and 18 injuries.

Bulletin No. 21 contains the record of only one train accident—a collision—in which more than 10 persons were killed, but the totals of casualties of all classes are large, no improvement being shown over preceding quarters. Number of passengers killed in train accidents, 52. One collision, killing 17 and injuring 56, was due to confusion of telegraphic orders; one derailment, killing 9 and injuring 43, was at a misplaced switch, and another, killing 7 and injuring 40, was due to excessive speed.

Bulletin No. 22 shows 180 passengers killed in train accidents—a number larger than that in any other bulletin except No. 13. One rear collision in the District of Columbia caused the death of 43 passengers and the injury of 63. A butting collision killed 43 persons and injured 155, the bodies of the killed being consumed by fire. In the derailment of a passenger train at a drawbridge 57 persons were killed and 36 injured.

Bulletin No. 23 shows 126 passengers killed in train accidents. It contains the record of two collisions, killing 41 persons, and two derailments, killing the same number. The number of employees killed in coupling accidents is 25 per cent less than in the last preceding quarter.

Bulletin No. 24, though representing that quarter of the year which is usually the lightest in traffic, showed all of the principal totals of casualties larger than in the same quarter of the year preceding, and the number of passengers killed in train accidents was very much larger. One derailment killed 33 persons and one collision 8. The tables for the year ending June 30, 1907, showed heavy increases in all items except accidents in car coupling and from striking against overhead obstructions, and the number of passengers killed and injured in collisions and derailments showed an alarming increase, the number of killed in this class being 17 per cent higher than the very large total reported in the year ending June 30, 1905. A condensed list is given of 10 prominent accidents in the year ending June 30, 1907, to which are charged an aggregate of 291 deaths.

Bulletin No. 25 shows 110 passengers killed in train accidents, three collisions and one derailment being responsible for 80 deaths in this class. The number of passengers killed from other causes (mostly their own negligence) also shows a large increase. One of the most serious collisions was due to the misreading of a dispatcher's order, and another to a mistake in sending or receiving the order.

U. S. Interstate Commerce Commission
Washington, D. C.

Accident Bulletin

No. 27

January, February, and March
1908



Washington
Government Printing Office
1908

ACCIDENT BULLETIN NO. 27

Showing Collisions and Derailments of Trains and Casualties to Persons

during the months of
January, February, and March, 1908

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



THE INTERSTATE COMMERCE COMMISSION.

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JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

ACCIDENT BULLETIN No. 27.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING MARCH 31, 1908.

The number of persons killed in train accidents during the months of January, February, and March, 1908, as shown in reports made by the railroad companies to the Interstate Commerce Commission under the "accident law" of March 3, 1901, was 125, and of injured 2,770. Accidents of other kinds, including those sustained by employees while at work, and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 15,441 (728 killed and 14,713 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty:^a

TABLE NO. 1.—Summary of casualties to persons, January, February, March, 1908.^{b c}

	Passengers (a and b).		Persons carried under agree- ment or contract (bb).		Total (a, b, and bb).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	10	603	....	93	10	696	35	348	8	142
Derailments.....	9	654	2	49	11	703	33	262	2	33
Miscellaneous train accidents, including locomotive-boiler explosions.....	....	19	....	2	.....	21	10	189	....	56
Total train accidents.....	19	1,276	2	144	21	1,420	78	799	10	231
Coupling or uncoupling.....	....	....	....	....	....	....	13	207	5	133
While doing other work about trains or while attending switches.....	....	....	....	....	....	....	12	1,716	7	644
Coming in contact with overhead bridges, structures at side of track, etc.....	....	2	1	.....	1	2	17	118	1	64
Falling from cars or engines or while get- ting on or off.....	32	556	1	18	33	574	54	1,003	17	582
Other causes.....	16	520	1	41	17	561	22	189	25	128
Total (other than train accidents).....	48	1,078	3	59	51	1,137	118	3,233	55	1,551
Total all classes.....	67	2,354	5	203	72	2,557	196	4,032	65	1,782

^a The casualties to passengers have been divided into three classes. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight.

^b Table No. 1 is continued on next page.

^c Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

TABLE NO. 1.—Summary of casualties to persons, January, February, March, 1908.—Continued.

	Yard trainmen (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	5	84	4	67	52	641	62	1,337
Derailments.....	4	51	2	69	41	415	52	1,118
Miscellaneous train accidents, including locomotive-boiler explosions.....	1	31	.....	18	11	294	11	315
Total train accidents.....	10	166	6	154	104	1,350	125	2,770
Coupling or uncoupling.....	23	277	3	16	44	633	44	633
While doing other work about trains or while attending switches.....	13	663	12	536	44	3,559	44	3,559
Coming in contact with overhead bridges, structures at side of track, etc.....	1	70	3	8	22	260	23	262
Falling from cars or engines or while getting on or off.....	25	830	31	321	127	2,736	160	3,310
Other causes.....	23	116	245	3,185	315	3,618	332	4,179
Total (other than train accidents).....	85	1,956	294	4,066	552	10,806	603	11,943
Total all classes.....	95	2,122	300	4,220	656	12,156	728	14,713

The total number of casualties to passengers and employees reported in the quarter under review (15,441) is smaller than in any quarter since that ending with March, 1905; the total number of passengers and employees killed by all causes (last item in Table No. 1a) is smaller than in any quarter since June, 1904, and the total killed in train accidents (125) is smaller than in any quarter since the monthly records were established, in July, 1901. The number of employees killed in coupling accidents (44) is smaller than in any quarter since June, 1902. These gratifying reductions in the lists of deaths and injuries are all due primarily to the reduction in the volume of traffic on practically all of the railroads of the country. The condition was indicated, though in a lesser degree, in the last bulletin. Reduced traffic has resulted also in easier work and shorter hours.

The following table (No. 1a) shows the usual comparisons with the last preceding bulletin and with one year back, and below it is a list showing the totals of passengers and employees killed in train accidents, each quarter, since the monthly records were established:

TABLE NO. 1a.—Comparisons of principal items.

	Bulletin 27.	Bulletin 26.	Bulletin 23.
1. Passengers killed in train accidents.....	21	21	126
2. Passengers killed, all causes.....	72	81	184
3. Employees killed in train accidents.....	104	199	295
4. Employees killed in coupling.....	44	77	62
5. Employees killed, all causes.....	656	1,011	1,109
6. Total passengers and employees killed, all causes.....	728	1,092	1,293

Passengers and employees killed in train accidents.

Bulletin No. 27.....	125	Bulletin No. 13.....	411
26.....	220	12.....	167
25.....	346	11.....	221
24.....	250	10.....	446
23.....	421	9.....	280
22.....	474	8.....	230
21.....	267	7.....	300
20.....	194	6.....	266
19.....	274	5.....	263
18.....	320	4.....	140
17.....	272	3.....	212
16.....	262	2.....	272
15.....	232	1.....	240
14.....	242		

The total number of collisions and derailments in the quarter now under review was 2,632 (1,190 collisions and 1,442 derailments), of which 199 collisions and 220 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$1,977,419. Given more in detail, these facts appear as below:

TABLE NO. 2.—Collisions and derailments, January, February, and March, 1908.

	Number.	Loss.	Killed.	Injured.
Collisions, rear	235	\$188,731	12	271
Collisions, butting	153	231,394	22	418
Collisions, train separating	78	31,108	2	38
Collisions, miscellaneous	724	335,047	26	610
Total.....	1,190	786,280	62	1,337
Derailments due to defects of roadway, etc.....	331	210,255	13	382
Derailments due to defects of equipment.....	580	498,429	6	143
Derailments due to negligence of trainmen, signalmen, etc....	75	44,195	3	63
Derailments due to unforeseen obstruction of track, etc.....	87	103,102	7	92
Derailments due to malicious obstruction of track, etc.....	24	29,470	4	48
Derailments due to miscellaneous causes.....	345	305,688	19	390
Total.....	1,442	1,191,139	52	1,118
Total collisions and derailments.....	2,632	1,977,419	114	2,455
Total for same quarter of 1907.....	3,991	3,536,110	355	4,456

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest.

TABLE 2a.—Causes of twenty-six prominent train accidents (Class A).

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	R	F and F.....	0	0	\$1,467	19	False clear manual block signal. Operator's experience 4 years. This operator says that when the train approached he "was working on his books and unconsciously pulled" off the signal without consulting the block sheet.
2	B	F and F.....	1	3	3,075	51	Operator failed to deliver meeting order; also train ran past an automatic block signal set against it.
3	B	P and F.....	2	13	4,500	3	Mistake in dispatcher's order. (See note in text below.)
4	R	F and F.....	0	0	5,000	1	Air brakes inoperative; angle cock on front end of first car partly closed; cause not discovered. At the last station where the air brakes should have been tested, the duty was neglected.
5	M	F and F.....	1	1	5,000	56	Northbound train ran past switch at end of double track. (See note in text below.)
6	R	P and F.....	2	23	6,400	22	Extra passenger train (11 p. m.) ran past distant and home automatic block signals; dense fog.
7	M	P and P.....	8	17	8,000	26	Careless management of street car at crossing. (See note in text below.)
8	B	F and F.....	0	7	9,220	4	Conductor and engineman misread name of station in meeting order. Conductor in service 8 months.
9	B	F and F.....	0	0	10,250	5	Engineman of empty engine overlooked meeting order.
10	B	P and F.....	1	20	11,852	46	Conductor and engineman of northbound passenger train overlooked meeting order; engineman also ran past automatic block signal set against him.
11	B	F and F.....	0	4	14,914	53	Misunderstanding between conductors of westbound and eastbound trains as to the station for meeting the second part of a separated train. (See note in text below.)
12	B	F and F.....	5	2	18,600	50	Mistake in dispatcher's order. Operator, 2 years in service, omitted the word "East" from the name of the meeting station, though in repeating the order back to the dispatcher he had given the name correctly.
13	B	P and F.....	1	13	21,000	27	Mistake in dispatcher's order, the forms of the orders being substantially as follows: The order read "Run from A to C. Meet 7 at B." It was written out and delivered, "Run from A to C. Meet 7 at C." The operator had had 5 years' experience and is reported as having a very good record.
Total			21	103	119,278		

DERAILMENTS.

1	D	P.....	1	23	\$1,310	68	Accidental obstruction.
2	D	P.....	3	28	3,400	30	Broken rail; speed 18 miles an hour. Rail weighing 56 pounds per yard; made in 1863.
3	D	P.....	2	43	4,795	43	Bolts in track had been loosened by the derailment of an engine 9 hours before; defect in track had not been discovered. Rails partly covered by snow.
4	D	P.....	0	15	6,580	31	Unexplained; speed 45 miles an hour. Driving wheels of locomotive first to leave track.
5	D	P.....	0	0	11,400	33	Broken wheel; station building knocked down and fire started from station stove destroyed building and 3 cars. Wheel, pressed steel, one year old. Had been turned once. There was a well-defined "pipe" in the metal.
6	D	F.....	0	0	11,400	57	Bridge fell under coal train. Wooden Howe truss 150-foot span. Reported in good condition. Believed clamps had been broken in consequence of severe application of brakes.
7	D	P.....	2	2	11,600	67	Malicious obstruction. (Two-inch hexagonal nut on rail, on outside of curve.) Engine and one car broke through bridge 28 feet high.
8	D	P.....	1	68	11,630	38	Broken 80-pound rail.
9	D	F.....	0	0	14,000	10	Broken wheel.
10	D	F.....	0	0	14,800	61	Brake rod dropped on track, having become loosened by the working out of the key bolt.

TABLE 2a.—Causes of twenty-six prominent train accidents (Class A)—Continued.

DERAILMENTS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to en- gines, cars, and roadway.	Reference to record.	Cause.
11	D	P.....	0	5	21,900	45	Soft roadbed; speed (1 a. m.) 18 miles an hour. Damage due largely to fire from Baker heater in sleeping car 3 hours after derailment. Sleeping car was not owned by the railroad company, and its conductor had given assurance that there was no fire in the car.
12	D	F.....	0	1	28,700	63	Broken wheel. Wheel cast iron, 33 inches in diameter, 8 years old. Flaw had existed some time.
13	D	P.....	3	87	46,000	14	Unexplained. Speed 25 miles an hour on curve of 6°. Grade 1 per cent descending. Part of train fell through trestle bridge and bridge was wrecked.
Total.....			12	272	187,515		
Total collisions and derailments.			33	375	306,793		

Collision No. 3 was due to the mistake of a telegraph operator in writing out a meeting order. The order, as recorded in the dispatcher's office, named "12:15" as the time at which a certain train must be at a certain station, but the operator, in writing the order for delivery, wrote "12:50." Two or three operators, who were listening at the time, testified that the order was transmitted over the wire as recorded by the dispatcher, namely, "12:15;" and the report indicates the belief on the part of the Superintendent that the station operator, not being satisfied with the copy which he had made, rewrote the whole order, and, in rewriting, made the mistake. The collision occurred about 12:30 a. m. The station operator had been on duty since 8 p. m., and had worked nearly all the preceding day at another station. At this other station he went on duty at 7 a. m., was relieved at 3:30 p. m., and then went to the station where the error occurred. The dispatcher who ordered the operator from one station to the other did not know that he had been on duty during the day, but appears to have understood that he had been relieved at that station in the morning.

Collision No. 5 occurred at end of double track. A train running from double to single track fouled the switch just as a train from the opposite direction came along. The collision occurred just after sundown. It was due to the fact that the double track had been extended and the engineman not informed of the fact. The switches had been moved about 1,500 feet, and the tower containing the telegraph office had also been moved; and the engineman regulated, or attempted to regulate, the speed of his train with reference to the location of the signal light on the tower. Besides running 1,500 feet farther than he was accustomed to running, he passed a cross-over track, which had been put in at the former location of the tower. He asserted that he did not notice the switch at this cross over.

The fireman, as well as the engineman, of this train is held blame-worthy, because he did not inform the engineman that the engine was fouling the single track, the view of the track being better from the fireman's than from the engineman's side of the engine.

The ignorance of the engineman concerning the change in the location of the switches and tower was due to the omission of himself and the conductor to read a telegraphic bulletin which had been issued at a station 16 miles back. The operator at this station had three bulletins for these men to read and sign. Two of the bulletins were properly read and receipted for, but the other was neglected and the operator did not notice this neglect. Thereafter the operator, in gross disregard of rules, sent to the dispatcher the names of the conductor and engineman as having been signed to the overlooked bulletin, although they had not signed it.

All these men had had ample experience in their respective departments. The men in charge of the train had been on duty thirteen hours and fifty minutes.

Collision No. 7, fatally injuring 8 passengers in an electric car, occurred at a street crossing where two standard (steam) railroads are crossed by a street, which is traversed by an interurban electric line. The two standard railroads lie parallel to each other, about 65 feet apart and the direction of their lines is north and south; the direction of the street is east and west. This double crossing has gates with an attendant, such as are generally used at grade crossings of streets over railroads, and two electric alarm bells, one at each railroad. On the day when this collision occurred the gates were out of order because the pneumatic pipes, by means of which they are operated, and which lie underground, had been ruptured in consequence of moisture freezing in one of them, and the attendant at the crossing gave his signals with a yellow flag in the day time and a yellow lantern at night. The electric alarm bells are reported as in good working order at the time of the accident. The bell at the track on which the accident occurred rings from the time an approaching train is within 2,000 feet of the crossing until it has passed the crossing. The regulations of the electric line require that the cars shall stop before crossing the steam railroad, and that the conductor shall go ahead on foot and assure himself that no steam railroad train is approaching, before the electric car passes over the crossing.

This collision occurred at 8:03 p. m., and the night was quite dark.

According to the report of the company operating the electric car, the conductor of that car went across both steam railroads with a red lantern in his hand; he saw no train coming and signaled to the motorman to proceed, but before the car had reached the first of the steam railroad tracks the conductor saw a train approaching rapidly on the second railroad and signaled to the motorman to stop, but it was then too late to avoid the collision. The electric car was struck in the middle and completely demolished.

According to the report of the steam railroad, the conductor of the electric car gave the proceed signal to his motorman before crossing the second railroad; and when he gave the signal the crossing watchman called to him that a train was coming. Both watchman and conductor then signaled the motorman to stop, but the motorman disregarded these signals.

Collision No. 11 was between a part of a westbound extra freight train, drawn by two engines, and a regular eastbound train. One of the engines and a part of the cars of the westbound train were sent forward from B to C and at C met the eastbound train. The two brakemen in charge of the part of the westbound train gave some information to the conductor of the eastbound concerning the point at which he was to meet the second part of the westbound train, and the eastbound proceeded; but the information was inaccurate or insufficient, and the conductor of the westbound, having one engine and the rear portion of his train, started from B before the eastbound reached there, and his train collided with the eastbound.

TABLE NO. 3.—*Details of Table No. 1—Causes of accidents to employees in coupling and uncoupling cars.*

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....	....	20	....	6	....	20	....	1
2	Adjusting coupler, cars accidentally started.....	....	3	....	6	1	6	....	1
3	Careless manipulation of uncoupling lever.....	....	4	....	3	....	3	....	....
4	Cars not equipped with automatic coupler.....	1	4	....	1	....	5	....	....
5	Coupler broken, using link and pin or chain.....	1	7	....	2	....	6	....	2
6	Coupling damaged cars.....	....	5	....	5	2	17	2	1
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....	1	6	....	1	....	5	....	1
8	Coupling with chain or other emergency appliance because of uneven track.....	....	....	....	1	....	....	....	....
9	Coupling or uncoupling safety chains.....	....	1	....	1	....	4	....	1
10	Fingers or hand caught between uncoupling lever and body of car.....	....	45	....	23	....	55	....	....
11	Uncoupling without using lever (unnecessary).....	....	5	....	6	1	7	....	....
12	Uncoupling without using lever, uncoupling lever not in working order.....	....	19	....	20	....	30	....	....
13	Foot caught in frog, switch, or guard rail.....	1	3	....	5	4	4	....	....
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	2	16	....	7	5	16	....	5
15	Opening knuckle when cars were near together, engine accidentally started.....	....	1	....	3	1	....	....	....
16	Opening knuckle, part of defective coupler fell on foot.....	....	3	....	1	....	7	....	....
17	Opening knuckle, lost footing.....	2	6	1	1	....	13	....	....
18	Riding on car to uncouple, slipped off.....	....	3	....	4	1	7	....	....
19	Struck by object at side of track.....	....	3	....	2	....	7	....	....
20	Caught by unexpected movement of car, due to slack running in.....	....	18	....	4	....	16	....	1
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals..	1	4	1	3	2	6	....	1
22	Uncoupling moving cars and lost footing.....	....	6	1	6	2	18	1	....
23	Parts hard to move, causing delay.....	....	3	....	4	....	4	....	....
24	Went between cars unnecessarily and contrary to rule.....	3	9	1	7	2	17	....	2
25	Hand caught between projecting load and end of next car.....	....	4	....	4	....	....	....	....
26	No witness (fatal injury).....	1	....	1	....	2	....	....	....
27	Other causes (see detailed list below).....	....	6	....	5	....	3	....	....
28	Unexplained.....	....	3	....	2	....	1	....	....
	Total.....	13	207	5	133	23	277	3	16

Details of injuries included in Table 3, subclass 27.

- J. 1. Burned by steam from heating hose.
- J. 2. Struck by corner of car.
- J. 3. Hand caught in knuckle of coupler.
- J. 4. Hand caught between drawheads.
- F. 1. Scalded by steam from steam hose.
- F. 2. Hand caught between drawheads.
- M. 1. Struck on head by lump of coal.
- M. 2. Lump of coal fell off car, cutting head.
- M. 3. Cut on head by piece of coal.
- M. 4. Stepped on nail.
- M. 5. Brake staff fell from car.
- M. 6. Stepped on piece of coal.
- M. 7. Head cut by stone falling off car.
- M. 8. Cut wrist on sharp piece of iron on drawbar.

TABLE 3A.—Nature of injuries to employees in coupling and uncoupling cars.

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other em- ployers.
Loss of feet.....	8	1	3	
Loss of legs.....	1		3	1
Loss of arms.....	5	1	6	1
Loss of hands.....		1	3	
Loss of fingers.....	7	8	12	
Loss of toes.....	1	1	1	
Fractured skull.....	1			1
Fractured leg.....	2	2	1	
Fractured arm.....	5	1	5	
Fractured collar bone or ribs.....	5		8	1
Fractured other bones.....	4	1	9	
Contusion of head or body.....	20	16	39	5
Contusion or laceration of feet.....	18	12	25	
Contusion or laceration of toes.....	3	3	2	
Contusion or laceration of legs.....	3	3	17	
Contusion or laceration of arms.....	8	8	13	2
Contusion or laceration of hands.....	31	26	27	3
Contusion or laceration of fingers.....	63	41	81	1
Dislocation.....	3	1	2	1
Internal injuries.....	4	2	2	
Sprains.....	8	2	16	
Shock.....				
Miscellaneous.....	7	3	2	
Total injuries.....	207	133	277	16
Killed.....	13	5	23	3
Total killed and injured	220	138	300	19

RECAPITULATION.

Total killed.....	44
Total injured.....	633
Total killed and injured	677

TABLE NO. 4.—Details of Table No. 1.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switch- ing crews).		Other em- ployees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....		10		4		3		2
	2 Ice or snow.....	2	9		8		10		1
	3 Parting of train.....	1	12		6	1	2		
	4 Derailment, collision, or shock due to abnor- mal movements of cars other than those in subclass 3.....	3	35	1	23	3	71	2	4
	5 While setting brakes.....	1	25	1	23	1	56		3
	Fell from—								
	6 Coal car.....	1	12		5	1	5	2	7
	7 Freight car other than box or coal car.....	3	35		17		12	3	14
	8 Engine or tender.....	6	108	3	60	1	40	1	19
C7	9 Passenger car.....	1	13		6		2	1	2
	10 Engines, tenders, or cars (all kinds) not in motion.....		56		44		23		65

TABLE NO. 4.—Details of Table No. 1.—Causes of accidents to employees, etc.—Cont'd.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
11	Miscellaneous causes.....	6	179	..	62	2	204	4	64
12	Not clearly explained.....	18	40	2	14	10	34	4	16
13	Slipped getting on moving trains or cars.....	4	98	4	62	1	62	6	45
14	Jumping off moving trains.....	3	132	2	86	2	128	5	43
15	Jumping from engines or cars anticipating collision, derailment, or other accident.....	..	41	..	6	..	17	..	..
C7 16	Fell from engines or cars by reason of defective handholds and sill steps.....	..	36	..	19	..	43	..	3
17	Getting on or off moving engine.....	5	149	4	126	3	121	3	32
18	Caught in frog, guard rail, or switch.....	..	7	..	1	..	2	..	1
	Total.....	54	1,003	17	582	25	830	31	321

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A), showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

^a For notes on Bulletins 1-16, see Bulletin No. 17.

Bulletin No. 17 records one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring at 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches, and a collision which was due to failure of "controlled manual" block signal working.

Bulletin No. 18 shows total casualties much larger than in the preceding quarters, due largely, no doubt, to an enormous increase in traffic. Many accidents are reported in which the men had been on duty excessively long hours. One collision, killing 17 persons, was due to the error of an engineman of five months' experience, who ran past five warning signals. Another collision, killing 10 persons, was due to the failure of the men in charge of a freight train to identify opposing passenger trains. One derailment of a passenger train, killing 13 persons, was reported as due to some cause that could not be discovered.

Bulletin No. 19 is like Bulletin 18 in showing a large number of casualties. One butting collision, due to failure of train dispatching, caused 34 deaths and 24 injuries and \$50,000 damages, besides the damages for deaths and injuries of persons. One collision was due to the negligence of men who had been worked flagrantly long hours. Particulars are given of a number of collisions due to complicated and unusual causes.

Bulletin No. 20 shows total deaths greater than in the corresponding quarter of the previous year, but the number of passengers and employees killed in train accidents was considerably smaller. The most serious accident in this bulletin was a butting collision of passenger trains, due to misinterpretation of a dispatcher's order by a pilot; 10 persons killed, 38 injured. One derailment, unexplained, train running slowly, caused 9 deaths and 18 injuries.

Bulletin No. 21 contains the record of only one train accident—a collision—in which more than 10 persons were killed, but the totals of casualties of all classes are large, no improvement being shown over preceding quarters. Number of passengers killed in train accidents, 52. One collision, killing 17 and injuring 56, was due to confusion of telegraphic orders; one derailment, killing 9 and injuring 43, was at a misplaced switch, and another, killing 7 and injuring 40, was due to excessive speed.

Bulletin No. 22 shows 180 passengers killed in train accidents—a number larger than that in any other bulletin except No. 13. One rear collision in the District of Columbia caused the death of 43 passengers and the injury of 63. A butting collision killed 43 persons and injured 155, the bodies of the killed being consumed by fire. In the derailment of a passenger train at a drawbridge 57 persons were killed and 36 injured.

Bulletin No. 23 shows 126 passengers killed in train accidents. It contains the record of two collisions, killing 41 persons, and two derailments, killing the same number. The number of employees killed in coupling accidents is 25 per cent less than in the last preceding quarter.

Bulletin No. 24, though representing that quarter of the year which is usually the lightest in traffic, showed all of the principal totals of casualties larger than in the same quarter of the year preceding, and the number of passengers killed in train accidents was very much larger. One derailment killed 33 persons and one collision 8. The tables for the year ending June 30, 1907, showed heavy increases in all items except accidents in car coupling and from striking against overhead obstructions, and the number of passengers killed and injured in collisions and derailments showed an alarming increase, the number of killed in this class being 17 per cent higher than the very large total reported in the year ending June 30, 1905. A condensed list is given of 10 prominent accidents in the year ending June 30, 1907, to which are charged an aggregate of 291 deaths.

Bulletin No. 25 shows 110 passengers killed in train accidents, three collisions and one derailment being responsible for 80 deaths in this class. The number of passengers killed from other causes (mostly their own negligence) also shows a large increase. One of the most serious collisions was due to the misreading of a dispatcher's order, and another to a mistake in sending or receiving the order.

Bulletin No. 26 shows a marked decrease in casualties as compared with preceding quarters, a large falling off in railroad traffic having taken place. The list of "prominent" train accidents includes only three cases which may be classed as notable.

ACCIDENT BULLETIN NO. 28 .

Showing

Collisions and Derailments of Trains

and

Casualties to Persons

during the months of

April, May, and June, 1908

with

Tables for the year ending June 30, 1908

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



THE INTERSTATE COMMERCE COMMISSION.

MARTIN A. KNAPP, of New York.
JUDSON C. CLEMENTS, of Georgia.
CHARLES A. PROUTY, of Vermont.
FRANCIS M. COCKRELL, of Missouri.
FRANKLIN K. LANE, of California.
EDGAR E. CLARK, of Iowa.
JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS IN THE UNITED STATES

DURING THE

THREE MONTHS ENDING JUNE 30, 1908.

The number of persons killed in train accidents during the months of April, May, and June, 1908, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 112, and of injured 2,277. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off cars, etc., bring the total number of casualties up to 13,689 (591 killed and 13,098 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.^a

TABLE No. 1.—Casualties to persons—April, May, and June, 1908. ^b ^c

	Passengers (a and b).		Persons carried under agree- ment or contract (bb).		Total (a, b, and bb).		Train men.		Train men in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	9	499	1	45	10	544	13	199	5	86
Derailments.....	1	561	2	83	3	644	60	287	0	30
Miscellaneous train accidents, including loco- motive-boiler explosions.....	0	23	0	2	0	25	5	157	1	49
Total train accidents.....	10	1,083	3	130	13	1,213	78	643	6	165
Coupling or uncoupling.....							12	171	2	121
While doing other work about trains or while attending switches.....							7	1,271	6	442
Coming in contact with overhead bridges, structures at side of track, etc.....	1	8	0	4	1	12	12	116	5	54
Falling from cars or engines or while getting on or off.....	29	667	1	17	30	684	55	775	14	406
Other causes.....	11	557	2	56	13	613	18	157	15	70
Total (other than train accidents).....	41	1,232	3	77	44	1,309	104	2,490	42	1,093
Total (all classes).....	51	2,315	6	207	57	2,522	182	3,133	48	1,258

^a The casualties to passengers have been divided into three classes. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight.

^b Table No. 1 is continued on next page.

^c Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

TABLE No. 1.—*Casualties to persons—April, May, and June, 1908—Continued.*

	Yard train men (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	1	40	5	86	24	411	34	955
Derailments.....	4	44	3	48	67	409	70	1,053
Miscellaneous train accidents, including loco- motive-boiler explosions.....	1	24	1	14	8	244	8	269
Total train accidents.....	6	108	9	148	99	1,064	112	2,277
Coupling or uncoupling.....	16	235	0	22	30	549	30	549
While doing other work about trains or while attending switches.....	2	511	1	518	16	2,742	16	2,742
Coming in contact with overhead bridges, structures at side of track, etc.....	3	59	5	15	25	244	26	256
Falling from cars or engines or while getting on or off.....	28	558	30	319	127	2,058	157	2,742
Other causes.....	14	89	190	3,603	237	3,919	250	4,532
Total (other than train accidents).....	63	1,452	226	4,477	435	9,512	479	10,821
Total (all classes).....	69	1,560	235	4,625	534	10,576	591	13,098

This bulletin covers the quarterly period ending with the *ninth* month of light freight traffic on most of the principal railroads. This depression, which diminished the number of freight trains run and caused the dismissal of many railroad employees, showed itself in some degree in Bulletin No. 26 (quarter ending December 31, 1907). Bulletin No. 27 showed gratifying reductions in the number of casualties in all of the different classes, the number of persons (passengers and employees) killed in train accidents being the smallest reported since the monthly records were established. In the present bulletin the improvement is carried still farther. The number of passengers killed in train accidents (13) is the smallest ever reported in the quarterly records, the lowest previous record (18) being that in Bulletin No. 4 (June 30, 1902). The total of passengers and employees killed in this class (112) is 13 less than the previous low record (125, Bulletin 27). The number of employees killed in coupling or uncoupling cars now reported (30) is smaller than in any other quarter except that ending September 30, 1901 (Bulletin No. 1), when the number was exactly the same.

The following table (No. 1a) shows the usual comparisons with the last preceding bulletin and with one year back, and below it is a list showing the totals of passengers and employees killed in train accidents, each quarter, since the monthly records were established:

TABLE NO. 1A.—Comparisons of principal items.

	Bulletin 28.	Bulletin 27.	Bulletin 24.
1. Passengers killed in train accidents.....	13	21	48
2. Passengers killed, all causes.....	57	72	111
3. Employees killed in train accidents.....	99	104	202
4. Employees killed in coupling.....	30	44	72
5. Employees killed, all causes.....	534	656	954
6. Total passengers and employees killed, all causes.....	591	728	1,065

TABLE NO. 1B.—Passengers and employees killed in train accidents.

Bulletin.	Passen- gers.	Em- ployees.	Total.	Bulletin.	Passen- gers.	Em- ployees.	Total.
No. 28.....	13	99	112	No. 14.....	53	189	242
27.....	21	104	125	13.....	228	183	411
26.....	21	199	220	12.....	23	144	167
25.....	110	236	346	11.....	40	181	221
24.....	48	202	250	10.....	147	299	446
23.....	126	295	421	9.....	60	220	280
22.....	180	294	474	8.....	31	199	230
21.....	52	215	267	7.....	52	248	300
20.....	27	167	194	6.....	40	226	266
19.....	62	212	274	5.....	41	222	263
18.....	50	270	320	4.....	18	122	140
17.....	43	229	272	3.....	41	171	212
16.....	41	221	262	2.....	51	221	272
15.....	28	204	232	1.....	57	183	240

The total number of collisions and derailments in the quarter now under review was 2,130 (820 collisions and 1,310 derailments), of which 130 collisions and 198 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$1,617,398. Given more in detail, these facts appear as below:

TABLE NO. 2.—Collisions and derailments, April, May, and June, 1908.

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	141	\$109,044	5	155
Collisions, butting.....	98	194,757	18	442
Collisions, train separating.....	64	23,025	.....	20
Collisions, miscellaneous.....	517	210,147	11	338
Total.....	820	536,973	34	955
Derailments due to defects of roadway, etc.....	274	215,790	6	314
Derailments due to defects of equipment.....	529	398,140	6	162
Derailments due to negligence of train men, signalmen, etc.....	61	22,395	2	52
Derailments due to unforeseen obstruction of track, etc.....	120	224,999	30	202
Derailments due to malicious obstruction of track, etc.....	19	23,851	6	64
Derailments due to miscellaneous causes.....	307	195,250	20	259
Total.....	1,310	1,080,425	70	1,053
Total collisions and derailments.....	2,130	1,617,398	104	2,008

NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over; notable cases in which passengers are killed and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest.

TABLE NO. 2A.—*Causes of twenty prominent train accidents (Class A).*

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	R	P and F.....	1	6	\$1,085	1	Passenger train ran 9,044 feet past automatic block signal (indicating stop) and at 40 miles an hour struck freight train moving at about 15 miles an hour. One passenger in the freight train was killed. The engineman at fault was experienced.
2	B	P and P.....	1	29	2,300	21	Butting collision of special trains. Engineman of excursion train disregarded stop signal at a registering station. Conductor applied air brakes, but too late.
3	B	P and F.....	0	2	2,500	22	Eastbound freight and westbound passenger, 10.35 p. m. Telegraph wire being out of order, trainmaster (on freight train) attempted to modify dispatcher's order, but his directions were thwarted by a mistake of an inexperienced operator who had been in service only that night. The engines of both trains were equipped with electric headlights, and one or both of the enginemen misjudged the distance between the trains.
4	M	P and F.....	1	9	3,350	19	Engineman of extra freight misread watch, making a mistake of 1 hour. Discovering that he was on the time of a special passenger train, he set back, but too late. The conductor of the freight was dismissed for carelessness.
5	B	P and F.....	0	0	4,000	43	Extra train was run without orders. (See note in text below.)
6	B	P and F.....	0	32	6,380	40	Engineman forgot order; error also in block signaling. (See note in text below.)
7	B	F and F.....	0	25	12,874	41	Conductor and engineman forgot or overlooked 1 of 3 orders which they held; met 1 train but failed to wait for another one, covered by another order.
8	B	P and P.....	1	31	13,184	39	Operator neglected to deliver order to eastbound train. Had 4 orders, delivered only 3. Operator's experience, 6 years.
9	B	P and F.....	2	54	20,845	20	Conductor and engineman of northbound freight encroached on time of southbound passenger. These men had leave to use 40 minutes of the time of the passenger train, but made a mistake in calculating from the time table. They allowed themselves until 12.56 p. m. to reach a certain station, when, according to the order and the time table, they should have been there at 11.56. These men were experienced.
10	B	P and P.....	9	21	25,000	46	Of the 9 persons killed, 7 were passengers. The cause was disregard of a dispatcher's order. (See note in text below.)
Total collisions.....			15	209	91,518		

TABLE NO. 2A.—Causes of twenty prominent train accidents (Class A)—Continued.

DERAILMENTS.

No.	Class.	Kind of train.	Killed.	Injured	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	D	P.....	0	4	\$400	55	Ran off derail at approach to drawbridge, 10 p. m. Signal light was extinguished, the filament of an electric lamp having been burned out. Engineer said he was deceived by a green light on the draw. This light, displayed for the benefit of boats in the river, turns with the draw, and the draw had not been opened.
2	D	P.....	0	0	635	54	Switch at power interlocking thrown while train was passing over it; movement of detector bar was forced in spite of presence of wheels of train.
3	B	F.....	0	0	2,000	8	Runaway of work train on descending grade, due to air brakes being inoperative. Laborers in getting aboard train stepped on angle cock, closing it.
4	D	P.....	2	4	2,500	29	Dynamite maliciously placed on track.
5	D	P.....	1	1	3,350	58	Washout. Roadbed weakened by flood which had been diverted from a mountain stream 200 feet above the road by a fallen tree.
6	D	F.....	0	3	13,477	30	Arch, 9 feet radius, beneath track, partly washed out by flood. Surface of roadbed showed no indication of weakness.
7	D	F.....	2	1	20,550	9	Embankment washed away by flood, due to cloudburst.
8	D	P.....	3	61	25,000	56	Burned bridge, 6 p. m. No blaze visible from approaching train.
9	D	P.....	0	7	56,600	17	Embankment 25 feet high gave way. Cause apparently seepage, which had been going on some time, but had not been discovered. Track in good condition. Fire in wreck ignited gas from broken tank and all but 1 of the cars of the train were destroyed.
10	D	F.....	0	0	10,900	35	Broken flange; derailed cars destroyed a bridge.
Total derailments...			8	81	135,412		
Total collisions and derailments.....			23	290	226,930		

Collision No. 5 was due to the attempt of a conductor and engineer to run on a foreign line without train orders; they meant to protect their train by flag, but failed to do so. These men, running a train of the A & B road, were to run over the X & Y, on account of the track of their own line being impassable. When leaving a registering station on the X & Y they did so without authority, making no communication with the telegraph operator; they neither registered nor asked for a clearance card and they had no train order. They sent a flagman ahead, but their instructions to him were not in writing and he did not get to the proper point to stop the approaching train. He should have stopped at a certain switch, but instead of doing this he went to the telegraph office and the passenger train, with which his train subsequently collided, left the station before he could convey to the engineer the order to wait.

Collision No. 6 was caused by the engineer of a passenger train forgetting a dispatcher's order, requiring him to wait at a certain station for an opposing freight train. He put this order in his pocket while oiling his locomotive, and forgot it. The conductor, who should

have read the order aloud in the presence of the engineman, neglected to do so. The block system, more or less modified, was in use on the line and the passenger train should have been held at the entrance of the block section in which the collision occurred, but the signalman gave it a clear signal, "thinking that the train was to run to the far end of the siding, there to wait for the opposing train." All of the men concerned are reported as experienced.

Collision No. 10, a butting collision of electric cars, was due to the violation of a dispatcher's order by the conductor and motorman of one of the cars, which was running "extra." The stations on the line where the collision occurred are A, C, B, and N. The regular car was running from N to A. About the time that it left N the extra car was ready to start from A to N, and the dispatcher (sending train orders by telephone) dictated an order for both trains, directing that the extra meet the regular train at B. Finding that it was too late to deliver the order to the regular train, he instructed the operator at A to change it. As originally sent it read: "Car 2 will run extra A to N and meet train 3 at B." He ordered it changed to read: "* * * will run extra A to N and report at B."

The authority to run as an extra train, when given in this unqualified form, means that the extra must keep clear of the schedules of all regular trains in either direction, and therefore (in this case) must keep off the time of No. 2. This movement could have been made, as there were two places at which the extra could have cleared the regular trains before reaching the point at which it would encroach on the regular train's schedule; but the men in charge of the extra car proceeded toward B, apparently without considering the schedule of the regular train, and collided with it near C.

The operator at A, when ordered to change the train order, did not destroy the one that he had written, but simply drew his pen through the words "and will meet 3 at B," and wrote the new part of the order below the obliterated line. The conductor claims that the operator informed both himself and the motorman that they "had a clear track to B." This statement is denied by the operator. For such a movement as this the conductor had no authority to accept other than a written order from the operator. The motorman, who was injured in the collision, left for parts unknown while still under the doctor's care, and no statement was obtained from him.

This motorman, 33 years old, had been in the service of the company about six weeks, but is said to have been employed on single-track interurban railroads for the past eight years. The officers of the road regarded him as one of the best of their motormen. The conductor had been in the service of the company six weeks, but had been in the employ of other electric companies; kind of service not stated. The operator is reported as having a clear record.

TABLE NO. 3.—Details of Table No. 1—Causes of accidents to employees in coupling and uncoupling cars.

Sub-class.	Causes.	Train men.		Train men in yards.		Yard train men (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		18		14		20		
2	Adjusting coupler, cars accidentally started.....		5		1	1	8		
3	Careless manipulation of uncoupling lever.....		1		2		3		1
4	Cars not equipped with automatic coupler.....		2				3		1
5	Coupler broken, using link and pin or chain.....		2				1		
6	Coupling damaged cars.....	1	3		4		7		
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		2		1		3		
8	Coupling with chain or other emergency appliance because of uneven track.....								
9	Coupling or uncoupling safety chains.....						1		1
10	Fingers on hand caught between uncoupling lever and body of car.....		30		24		48		7
11	Uncoupling without using lever (unnecessary).....		5		1		6		1
12	Uncoupling without using lever, uncoupling lever not in working order.....		23		15		29		3
13	Foot caught in frog, switch, or guard rail.....	1	2	1	4	2	4		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	2	13		5	1	18		2
15	Opening knuckle when cars were near together, engine accidentally started.....		4		2	1	3		2
16	Opening knuckle, part of defective coupler fell on foot.....				2		5		
17	Opening knuckle, lost footing.....		1		3	3	2		
18	Riding on car to uncouple, slipped off.....	1	4	1	4		11		
19	Struck by object at side of track.....		2		4		3		
20	Caught by unexpected movement of car, due to slack running in.....		19		13	3	19		
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals..	1	2		2	1	1		1
22	Uncoupling moving cars and lost footing.....	1	3		6	1	10		1
23	Parts hard to move, causing delay.....		6		1		5		
24	Went between cars unnecessarily and contrary to rule.....	1	12		8	1	12		
25	Hand caught between projecting load and end of next car.....		4		1				
26	No witness (fatal injury).....	4				2			
27	Other causes.....		6		3		12		1
28	Unexplained.....		2		1		1		1
	Total.....	12	171	2	121	16	235		22

Details of injuries included in Table 3, subclass 27.

- A. 1. Lumber fell off car.
- A. 2. Manhole cover fell off engine tank.
- A. 3. Air hose flew up.
- A. 4. Engine struck rail, which swung around.
- M. 1. Struck by pin lifter.
- M. 2. Burned by steam from hose.
- M. 3. Board fell from top of car.
- M. 4. Piece of pipe fell off car.
- M. 5. Cut by piece of steel projecting from rail.
- M. 6. Scalded by steam.
- M. 7. Iron pulley was jarred off end sill of car.
- M. 8. Push pole fell on foot.
- M. 9. Finger caught in pin hole.
- M. 10. Slipped on tie which was lying between tracks.
- M. 11. Load of bridge iron shifted, catching feet.
- M. 12. Stepped on nail.
- J. 1. Lump of coal fell off engine.
- J. 2. Trap door of car fell.
- J. 3. Caught "brake club" in drawbar and it flew up.
- J. 4. Stepped on nail.
- J. 5. Lever came loose from car.
- J. 6. Lump of coal fell off car.

TABLE NO. 3A.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Train men.	Train men in yards.	Yard train men.	Other em- ployees.
Loss of feet.....	6	2	3	.....
Loss of legs.....	1	3	2	.....
Loss of arms.....	1	2	.....	.....
Loss of hands.....	1	2	.....	.....
Loss of fingers.....	12	10	6	3
Loss of toes.....	2	.....	.....	.....
Fractured skull.....	.....	.....	.....	.....
Fractured leg.....	2	1	.....	.....
Fractured arm.....	1	.....	5	.....
Fractured collar bone or ribs.....	3	2	3	.....
Fractured other bones.....	6	2	2	.....
Contusion of head or body.....	18	12	28	3
Contusion or laceration of feet.....	8	14	25	.....
Contusion or laceration of toes.....	4	2	4	.....
Contusion or laceration of legs.....	5	7	12	.....
Contusion or laceration of arms.....	6	4	10	2
Contusion or laceration of hands.....	16	26	32	1
Contusion or laceration of fingers.....	64	25	82	9
Dislocation.....	3	.....	2	.....
Internal injuries.....	4	.....	4	.....
Sprains.....	3	5	11	3
Shock.....	.....	.....	.....	.....
Miscellaneous.....	5	2	4	1
Total injuries.....	171	121	235	22
Killed.....	12	2	16	.....
Total killed and injured.....	183	123	251	22

RECAPITULATION.

Total killed.....	30
Total injured.....	549
Total killed and injured.....	579

TABLE NO. 4.—*Details of Table No. 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub- class.	Causes.	Train men.		Train men in yards.		Yard train men (switch- ing crews).		Other em- ployees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	1 Fall from roof of box car by reason of—	.....	.....	.....	.....	.....	.....	.....	.....
	2 Defect in car.....	.....	4	.....	.....	1	5	.....	1
	3 Ice or snow.....	.....	.....	.....	.....	.....	2	.....	.....
	4 Parting of train.....	.....	12	.....	7	.....	2	.....	.....
	5 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	.....	41	.....	20	5	57	1	11
	6 While setting brakes.....	2	18	1	12	1	39	.....	2
	7 Fall from—	.....	.....	.....	.....	.....	.....	.....	.....
	8 Coal car.....	.....	3	.....	2	.....	2	1	5
	9 Freight car other than box or coal car.....	5	31	1	8	1	8	5	19
	10 Engine or tender.....	12	80	.....	47	3	45	3	11
C7	11 Passenger car.....	2	6	.....	2	.....	.....	2	4
	12 Engines, tenders, or cars (all kinds) not in motion.....	.....	44	.....	22	.....	9	2	51
	13 Miscellaneous causes.....	9	128	5	57	4	121	.....	49
	14 Not clearly explained.....	13	29	.....	6	4	30	1	16
	15 Slipped getting on moving trains or cars.....	3	94	1	44	2	51	6	48
	16 Jumping off moving trains.....	4	115	3	79	3	66	5	54
	17 Jumping from engines or cars anticipating collision, derailment, or other accident.....	2	18	.....	6	.....	7	.....	3
	18 Fell from engines or cars by reason of defective hand holds and sill steps.....	.....	34	.....	20	.....	39	.....	3
Total.....		55	775	14	406	28	558	30	319

YEARLY TABLES.

This bulletin completes the publication of the accident records under the law of March 3, 1901, for seven years, and the table next following, Table A, gives the aggregates for the year ending June 30, 1908, of the items which are given in Table No. 1 of the quarterly returns. The total number of casualties shown for the year in Table A is 72,753 (3,764 killed and 68,989 injured).

This table includes the following statistics which did not appear in the quarterly bulletins, the reports from which they are taken having been received after the bulletins were printed: One passenger and 13 employees killed and 17 passengers and 71 employees injured; damage to railroad companies' property (14 collisions and 15 derailments), \$20,677.

The totals of these yearly tables are not comparable with those given in the commission's annual statistical reports, for the reason that the monthly reports deal only with accidents to passengers and to employees while on duty. The monthly reports take no account of accidents to "other persons." These appear in the annual reports, and include casualties at highway crossings, to trespassers, to persons walking along the track, accidents to employees in shops remote from the railroad, and all other accidents not occurring to passengers and to employees actually on duty.

The salient facts of the records of casualties for the year are shown in Table B. From this it will be seen that the number of passengers killed in train accidents is much less than half as large as it was in the year before; and it is only a little over half the average for the preceding three years (1905-1907). The total of passengers and employees killed in train accidents equals only 63 per cent of the previous record. The number of fatal coupling accidents (239) is 20 per cent less than last year. That the diminution in this class is not so marked as in some of the others is to be explained largely by the fact that those dangers incident to coupling operations which can be guarded against, either by prescribing automatic couplers or by the establishment of adequate regulations, have been done away with by law. The fatal casualties now reported are largely due either to breakage or failure of parts or to carelessness or disregard of rules on the part of employees. For example, in Table D, "coupling damaged cars," subclass 6, and "defective uncoupling lever," subclass 12, account for 35 of the deaths of the year. Some of these defects of apparatus may be charged to unavoidable accident, while others are due to inefficient maintenance. In this connection it is proper to say that the beneficent effects of the safety-appliance laws which have been passed by Congress, and which have within the past few years

been greatly strengthened by decisions of the federal courts, continue to evidence themselves. It is regrettable that in the work of switching freight cars so many operations have to be made hurriedly, under circumstances in which men, ordinarily reasonably cautious, are led to take great risks. Subclasses 14 and 15 in Table D, also subclass 13, and many instances under subclasses 17 and 20, cover accidents where too much risk was taken; and the items in subclasses 22 and 24 are almost invariably explained in this way. These seven subclasses account for 130 fatal accidents in the yearly record under review.

TABLE A.—Summary of casualties to persons, year ending June 30, 1908.

[NOTE.—The italic letters refer to the corresponding totals for the last preceding year, printed below.]

	Passengers (a and b).		Persons car- ried under agreement or contract (b b).		Total (a, b, and b b).		Train men.		Train men in yards.		Yard train men (switch- ing crews).		Other em- ployees.		Total em- ployees.		Total per- sons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
a	102	3,903	9	281	111	4,284	191	1,832	42	600	21	423	26	484	303	3,428	414	7,712
b	46	2,677	6	380	54	3,037	203	1,413	16	108	26	234	15	251	240	2,005	314	5,122
c	6	75	0	14	0	66	26	304	6	226	6	129	8	76	79	1,325	79	1,410
d	148	6,655	17	775	165	7,430	453	4,138	64	1,084	53	785	62	811	642	6,818	807	14,246
e	.....	.....	.....	.....	.....	.....	71	959	45	642	114	1,435	9	85	239	3,121	239	3,121
f	.....	.....	.....	.....	.....	.....	61	7,790	40	2,700	46	2,966	57	2,515	206	15,991	206	15,991
g	3	20	1	8	4	37	71	681	12	376	13	246	14	51	110	1,353	114	1,360
h	154	2,434	5	67	159	2,501	281	4,607	98	2,356	152	3,376	137	1,396	688	11,735	827	14,238
i	69	2,440	9	237	78	2,677	160	831	103	438	106	443	1,124	15,514	1,493	17,326	1,571	20,003
j	226	4,903	15	312	241	5,215	644	14,868	206	6,412	433	8,585	1,341	19,661	2,716	49,826	2,957	64,741
k	374	11,538	82	1,087	408	12,645	1,097	19,003	362	7,496	496	9,370	1,403	20,472	3,358	55,344	3,764	68,889
	Total (other than train acci- dents).....																	
	Total, all classes																	

a b c d e f g h i j k

TABLE A.—Totals for preceding year.

	Passengers (a and b).		Persons car- ried under agreement or contract (b b).		Total (a, b, and b b).		Train men.		Train men in yards.		Yard train men (switch- ing screws).		Other em- ployees.		Total em- ployees		Total par- sons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
a.....	193	4,227	16	606	209	4,733	364	2,702	73	250	48	604	82	762	667	4,803	776	9,541
b.....	159	3,718	26	466	185	4,184	259	1,786	22	218	18	232	51	275	330	2,611	615	6,696
c.....	16	134	1	19	16	153	74	1,052	4	268	13	160	13	127	114	1,605	130	1,768
d.....	367	8,079	43	991	410	9,070	707	5,540	99	1,334	79	896	128	1,154	1,011	8,924	1,421	17,994
e.....	.....	.....	.....	.....	.....	.....	88	1,130	67	718	135	1,985	22	115	302	3,948	302	3,948
f.....	.....	.....	.....	.....	.....	.....	91	8,430	45	3,012	69	3,182	105	3,087	310	17,711	310	17,711
g.....	7	31	1	13	8	44	93	797	13	238	23	445	5	61	134	1,591	142	1,635
h.....	146	2,044	16	69	162	2,113	319	5,077	120	2,468	206	3,525	145	1,427	790	12,565	952	14,678
i.....	50	2,036	17	274	67	2,370	209	780	125	372	118	453	1,354	16,345	1,206	17,950	1,873	20,320
j.....	203	4,171	34	356	237	4,527	800	16,214	380	6,266	551	9,530	1,631	21,105	3,342	53,765	3,679	58,292
k.....	670	12,250	77	1,347	647	13,597	1,507	21,764	459	8,190	630	10,486	1,767	22,259	4,353	62,689	6,000	76,286

a b c d e f g h i j k

From Table B, next following, comparisons may be made for the last four years:

TABLE B.—Casualties to passengers and employees, years ending June 30.

	1908.		1907.		1906.		1905.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers:								
In train accidents.....	165	7,430	410	9,070	182	6,778	250	6,488
Other causes.....	241	5,215	237	4,527	226	4,407	187	3,542
Total.....	406	12,645	647	13,597	418	11,185	537	10,040
Employees:								
In train accidents.....	642	6,818	1,011	8,924	879	7,483	798	7,052
In coupling accidents....	239	3,121	302	3,948	311	3,503	243	3,110
Overhead obstructions, etc.....	110	1,353	134	1,591	122	1,497	92	1,185
Falling from cars, etc....	668	11,735	790	12,565	713	11,253	633	9,237
Other causes.....	1,699	33,317	2,116	35,661	1,772	31,788	1,495	24,842
Total.....	3,358	56,344	4,353	62,689	3,807	55,524	3,261	45,426
Total passengers and employees.....	3,764	68,989	5,000	76,286	4,225	66,709	3,798	55,466

The following tables are self-explanatory, being consolidations of the quarterly tables giving the same classes of facts:

TABLE C.—Collisions and derailments, damage to cars, engines, and roadway, years ending June 30.

	1908.				1907.			
	Num- ber.	Loss.	Killed.	Injured.	Num- ber.	Loss.	Killed.	Injured.
Collisions, rear.....	1,397	\$1,298,044	88	1,742	1,957	\$2,003,509	233	2,423
Collisions, butting.....	795	1,473,618	210	3,143	1,065	1,935,505	327	3,616
Collisions, train separa- ting.....	436	165,850	4	214	605	259,495	12	322
Collisions, miscellaneous...	3,735	1,697,687	112	2,613	4,300	2,101,059	203	3,180
Total.....	6,363	4,635,199	414	7,712	8,026	6,299,568	776	9,541
Derailments due to defects of roadway, etc.....	1,426	1,088,261	46	1,598	1,523	1,255,114	56	1,963
Derailments due to defects of equipment.....	2,796	2,176,194	37	831	3,178	2,490,028	59	926
Derailments due to negli- gence of trainmen, sig- nalmen, etc.....	406	273,038	31	376	495	396,626	120	756
Derailments due to un- foreseen obstruction of track, etc.....	381	562,441	67	590	387	556,725	68	658
Derailments due to mali- cious obstruction of track, etc.....	90	144,903	24	215	59	153,694	14	176
Derailments due to miscel- laneous causes.....	1,572	1,303,624	109	1,512	1,785	1,713,947	186	2,196
Total.....	6,671	5,548,461	314	5,122	7,432	6,556,134	515	6,665
Total collisions and derailments.....	13,034	10,183,660	728	12,834	15,458	12,855,702	1,291	16,206

TABLE A.—Totals for preceding year.

	Passengers (a and b).		Persons car- ried under agreement or contract (b b).		Total (a, b, and b b).		Train men.		Train men in yards.		Yard train men (switch- ing screws).		Other em- ployees.		Total em- ployees		Total per- sons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
a.....	193	4,227	16	506	209	4,733	384	2,702	73	850	48	604	88	752	667	4,808	776	9,541
b.....	159	3,718	26	466	185	4,184	259	1,786	22	218	18	232	31	275	330	2,511	515	6,695
c.....	15	134	1	19	16	153	84	1,052	4	268	13	160	13	127	114	1,605	130	1,758
d.....	367	8,079	43	991	410	9,070	707	5,540	99	1,334	79	896	126	1,154	1,011	8,924	1,421	17,994
e.....	.....	.....	.....	.....	.....	.....	88	1,130	57	718	135	1,985	22	115	303	3,948	303	3,948
f.....	.....	.....	.....	.....	.....	.....	91	3,430	45	3,012	69	3,182	105	3,087	310	17,711	310	17,711
g.....	7	31	1	13	8	44	93	797	13	288	23	445	5	61	134	1,591	142	1,635
h.....	146	2,044	16	69	163	2,113	319	5,077	130	2,466	206	3,525	145	1,497	790	12,565	952	14,678
i.....	50	2,098	17	274	67	2,370	209	780	125	372	118	453	1,354	16,345	1,806	17,950	1,873	20,330
j.....	203	4,171	34	356	237	4,527	800	16,214	380	6,256	551	9,530	1,631	21,105	3,342	53,765	3,579	58,292
k.....	670	12,250	77	1,347	647	13,597	1,507	21,764	459	8,190	630	10,488	1,757	22,259	4,363	62,689	5,000	76,286

a b c d e f g h i j k

From Table B, next following, comparisons may be made for the last four years:

TABLE B.—Casualties to passengers and employees, years ending June 30.

	1908.		1907.		1906.		1905.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers:								
In train accidents.....	165	7,430	410	9,070	182	6,778	350	6,498
Other causes.....	241	5,215	237	4,527	236	4,407	187	3,542
Total.....	406	12,645	647	13,597	418	11,185	537	10,040
Employees:								
In train accidents.....	642	6,818	1,011	8,924	879	7,483	798	7,052
In coupling accidents....	239	3,121	302	3,948	311	3,503	243	3,110
Overhead obstructions, etc.....	110	1,353	134	1,591	132	1,497	92	1,185
Falling from cars, etc....	668	11,735	790	12,565	713	11,253	633	9,237
Other causes.....	1,699	33,317	2,116	35,661	1,772	31,788	1,495	24,842
Total.....	3,358	56,344	4,353	62,689	3,807	55,524	3,261	45,426
Total passengers and employees.....	3,764	68,989	5,000	76,286	4,225	66,709	3,798	55,466

The following tables are self-explanatory, being consolidations of the quarterly tables giving the same classes of facts:

TABLE C.—Collisions and derailments, damage to cars, engines, and roadway, years ending June 30.

	1908.				1907.			
	Num- ber.	Loss.	Killed.	Injured.	Num- ber.	Loss.	Killed.	Injured.
Collisions, rear.....	1,397	\$1,298,044	88	1,742	1,957	\$2,003,509	233	2,423
Collisions, butting.....	795	1,473,618	210	3,143	1,065	1,935,505	327	3,616
Collisions, train separa- ting.....	436	165,850	4	214	695	259,495	13	322
Collisions, miscellaneous...	3,735	1,697,687	112	2,613	4,309	2,101,059	203	3,180
Total.....	6,363	4,635,199	414	7,712	8,026	6,299,568	776	9,541
Derailments due to defects of roadway, etc.....	1,426	1,088,261	46	1,598	1,528	1,255,114	58	1,983
Derailments due to defects of equipment.....	2,796	2,176,194	37	831	3,178	2,490,028	59	926
Derailments due to negli- gence of trainmen, sig- nalmen, etc.....	406	273,038	31	376	495	396,626	130	756
Derailments due to un- foreseen obstruction of track, etc.....	381	562,441	67	590	387	556,725	68	658
Derailments due to mali- cious obstruction of track, etc.....	90	144,903	24	215	59	153,694	14	176
Derailments due to miscel- laneous causes.....	1,572	1,303,624	109	1,512	1,785	1,713,947	186	2,196
Total.....	6,671	5,548,461	314	5,122	7,432	6,556,134	515	6,695
Total collisions and derailments.....	13,034	10,183,660	728	12,834	15,458	12,685,702	1,291	16,236

TABLE D.—Causes of accidents to employees in coupling and uncoupling cars, year ending June 30, 1908.

Sub-class.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		92		60		118		2
2	Adjusting coupler, cars accidentally started.....		28		15	6	41	1	2
3	Careless manipulation of uncoupling lever.....		17		8		27		3
4	Cars not equipped with automatic coupler.....	1	11		4	1	12		5
5	Coupler broken, using link and pin or chain.....	1	22	1	6	1	20		4
6	Coupling damaged cars.....	9	26	4	28	11	72	3	5
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....	2	17		9	1	26		1
8	Coupling with chain or other emergency appliance because of uneven track.....		1		2				
9	Coupling or uncoupling safety chains.....	1	7		6		14		3
10	Fingers or hand caught between uncoupling lever and body of car.....	1	188		120		302		15
11	Uncoupling without using lever (unnecessary).....		30	2	14	3	44		1
12	Uncoupling without using lever, uncoupling lever not in working order.....	2	118	2	85	4	168		4
13	Foot caught in frog, switch, or guard rail.....	3	12	3	14	16	22		
14	Opening or closing knuckle when cars were near together, misculated speed.....	6	76	1	42	10	89		10
15	Opening knuckle when cars were near together, engine accidentally started.....		10	1	8	3	17	1	3
16	Opening knuckle, part of defective coupler fell on foot.....		15		8		23		
17	Opening knuckle, lost footing.....	4	25	5	21	11	34		3
18	Riding on car to uncouple, slipped off.....	3	18	1	18	5	34		
19	Struck by object at side of track.....	2	12		13		29		1
20	Caught by unexpected movement of car, due to slack running in.....	10	73	1	44	13	84		6
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	2	12	2	9	3	14		4
22	Uncoupling moving cars and lost footing.....	3	24	5	20	7	77	2	2
23	Parts hard to move, causing delay.....		21		17		31		
24	Went between cars unnecessarily and contrary to rule.....	10	53	4	41	11	83		9
25	Hand caught between projecting load and end of next car.....		13		9		14		
26	No witness (fatal injury).....	9		11		7		2	
27	Other causes.....		21		13		34		1
28	Unexplained.....	2	17	2	8	1	6		2
	Total.....	71	959	45	642	114	1,435	9	35

TABLE D_X.—*Nature of injuries to employees in coupling and uncoupling cars, year ending June 30, 1908.*

Injuries.	Trainmen.	Trainmen in yards.	Yard trainmen.	Other employees.
Loss of feet.....	22	9	19	1
Loss of legs.....	9	5	8	2
Loss of arms.....	13	6	13	2
Loss of hands.....	4	5	6	1
Loss of fingers.....	51	35	41	7
Loss of toes.....	6	4	7	.....
Fractured skull.....	1	2	.....	1
Fractured leg.....	7	7	9	.....
Fractured arm.....	14	15	28	1
Fractured collar bone or ribs.....	21	9	24	5
Fractured other bones.....	27	14	32	1
Contusion of head or body.....	89	68	189	18
Contusion or laceration of feet.....	78	65	141	2
Contusion or laceration of toes.....	22	9	19	1
Contusion or laceration of legs.....	26	21	76	.....
Contusion or laceration of arms.....	36	30	68	5
Contusion or laceration of hands.....	142	121	188	9
Contusion or laceration of fingers.....	319	171	448	20
Dislocation.....	9	6	7	4
Internal injuries.....	15	11	16	1
Sprains.....	30	15	74	3
Miscellaneous.....	18	14	22	1
Total injuries.....	959	642	1,435	85
Killed.....	71	45	114	9
Total killed and injured.....	1,030	687	1,549	94

RECAPITULATION.

Total killed.....	239
Total injured.....	3,121
Total killed and injured.....	3,360

TABLE E.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines, year ending June 30, 1908.*

Sub-class.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	.....	25	.....	9	1	24	.....	5
	2 Ice or snow.....	3	18	.....	11	.....	19	.....	1
	3 Parting of train.....	6	75	.....	26	2	16	.....	1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	12	207	7	118	22	330	6	38
	5 While setting brakes.....	10	124	6	86	7	212	.....	12
	Fell from—								
	6 Coal car.....	4	41	5	20	2	25	9	26
	7 Freight car other than box or coal car.....	20	167	4	73	9	58	15	76
	8 Engine or tender.....	52	520	13	263	15	210	9	58
C7	9 Passenger car.....	5	42	1	16	.....	8	4	12
	10 Engines, tenders, or cars (all kinds) not in motion.....	1	252	1	158	.....	74	5	283
	11 Miscellaneous causes.....	46	886	13	348	21	827	12	251
	12 Not clearly explained.....	62	212	8	49	31	157	9	61
	13 Slipped getting on moving trains or cars.....	19	456	11	242	10	268	26	196
	14 Jumping off moving trains.....	10	550	8	346	8	423	21	229
	15 Jumping from engines or cars anticipating collision, derailment, or other accident..	4	169	1	37	2	66	1	10
	16 Fell from engines or cars by reason of defective hand holds and sill steps.....	1	162	2	100	.....	186	.....	12
	17 Getting on or off moving engine.....	26	661	16	426	22	460	19	169
	18 Caught in frog, guard rail, or switch.....	.....	40	.....	28	.....	13	1	5
Total.....		281	4,697	98	2,356	182	3,376	137	1,366

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A), showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 17 records one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring at 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches, and a collision which was due to failure of "controlled manual" block signal working.

Bulletin No. 18 shows total casualties much larger than in the preceding quarters, due largely, no doubt, to an enormous increase in traffic. Many accidents are reported in which the men had been on duty excessively long hours. One collision, killing 17 persons, was due to the error of an engineman of five months' experience, who ran past five warning signals. Another collision, killing 10 persons, was due to the failure of the men in charge of a freight train to identify opposing passenger trains. One derailment of a passenger train, killing 13 persons, was reported as due to some cause that could not be discovered.

Bulletin No. 19 is like Bulletin 18 in showing a large number of casualties. One butting collision, due to failure of train dispatching, caused 34 deaths and 24 injuries and \$50,000 damages, besides the damages for deaths and injuries of persons. One collision was due to the negligence of men who had been worked flagrantly long hours. Particulars are given of a number of collisions due to complicated and unusual causes.

* For notes on Bulletins 1-16, see Bulletin No. 17.

Bulletin No. 20 shows total deaths greater than in the corresponding quarter of the previous year, but the number of passengers and employees killed in train accidents was considerably smaller. The most serious accident in this bulletin was a butting collision of passenger trains, due to misinterpretation of a dispatcher's order by a pilot; 10 persons killed, 38 injured. One derailment, unexplained, train running slowly, caused 9 deaths and 18 injuries.

Bulletin No. 21 contains the record of only one train accident—a collision—in which more than 10 persons were killed, but the totals of casualties of all classes are large, no improvement being shown over preceding quarters. Number of passengers killed in train accidents, 52. One collision, killing 17 and injuring 56, was due to confusion of telegraphic orders; one derailment, killing 9 and injuring 43, was at a misplaced switch, and another, killing 7 and injuring 40, was due to excessive speed.

Bulletin No. 22 shows 180 passengers killed in train accidents—a number larger than that in any other bulletin except No. 13. One rear collision in the District of Columbia caused the death of 43 passengers and the injury of 63. A butting collision killed 43 persons and injured 155, the bodies of the killed being consumed by fire. In the derailment of a passenger train at a drawbridge 57 persons were killed and 36 injured.

Bulletin No. 23 shows 126 passengers killed in train accidents. It contains the record of two collisions, killing 41 persons, and two derailments, killing the same number. The number of employees killed in coupling accidents is 25 per cent less than in the last preceding quarter.

Bulletin No. 24, though representing that quarter of the year which is usually the lightest in traffic, showed all of the principal totals of casualties larger than in the same quarter of the year preceding, and the number of passengers killed in train accidents was very much larger. One derailment killed 33 persons and one collision 8. The tables for the year ending June 30, 1907, showed heavy increases in all items except accidents in car coupling and from striking against overhead obstructions, and the number of passengers killed and injured in collisions and derailments showed an alarming increase, the number of killed in this class being 17 per cent higher than the very large total reported in the year ending June 30, 1905. A condensed list is given of 10 prominent accidents in the year ending June 30, 1907, to which are charged an aggregate of 291 deaths.

Bulletin No. 25 shows 110 passengers killed in train accidents, three collisions and one derailment being responsible for 80 deaths in this class. The number of passengers killed from other causes (mostly their own negligence) also shows a large increase. One of the most serious collisions was due to the misreading of a dispatcher's order, and another to a mistake in sending or receiving the order.

Bulletin No. 26 shows a marked decrease in casualties as compared with preceding quarters, a large falling off in railroad traffic having taken place. The list of "prominent" train accidents includes only three cases which may be classed as notable.

Bulletin No. 27 shows further marked decreases in casualties, incident to the large falling off in railroad traffic. The number of passengers and employees killed in train accidents (125) is the smallest since the monthly records were established. The most fatal accident in this quarter was a collision at a street crossing, where 8 passengers in an electric car were killed.

U. S. Interstate Commerce Commission
Washington, D. C.

Accident Bulletin

No. 29

RAILROAD ACCIDENTS
IN THE UNITED STATES

During July, August, and September
1908



Washington
Government Printing Office
1909

ACCIDENT BULLETIN NO. 29

Collisions and Derailments of Trains and Casualties to Persons

during the months of

July, August, and September, 1908

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



WASHINGTON
GOVERNMENT PRINTING OFFICE
1909

THE INTERSTATE COMMERCE COMMISSION.

MARTIN A. KNAPP, of New York.

JUDSON C. CLEMENTS, of Georgia.

CHARLES A. PROUTY, of Vermont.

FRANCIS M. COCKRELL, of Missouri.

FRANKLIN K. LANE, of California.

EDGAR E. CLARK, of Iowa.

JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS

IN THE UNITED STATES DURING THE THREE MONTHS
ENDING SEPTEMBER 30, 1908.

The number of persons killed in train accidents during the months of July, August, and September, 1908, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 191, and of injured, 3,046. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 17,279 (734 killed and 16,545 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.^a

TABLE NO. 1.—*Casualties to persons—July, August, and September, 1908.*^b

	Passen- gers (a and b).		Persons carried under agree- ment or con- tract (bb).		Total (a, b, and bb).		Trainmen.		Train- men in yards.	
	Killed	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	35	915	8	110	43	1,025	42	300	7	116
Derailments.....	7	742	3	80	10	822	52	244	5	27
Miscellaneous train accidents, including loco- motive boiler explosions.....	.....	41	.....	5	.....	46	11	174	1	46
Total train accidents.....	42	1,698	11	195	53	1,893	105	718	13	189
Coupling or uncoupling.....	.....	.....	.....	.....	.....	.....	9	198	11	108
While doing other work about trains or while attending switches.....	.....	.....	.....	.....	.....	.....	7	1,750	5	606
Coming in contact with overhead bridges, structures at side of track, etc.....	1	22	.....	1	1	23	14	169	2	71
Falling from cars or engines or while getting on or off.....	33	810	4	23	37	833	59	1,015	11	512
Other causes.....	14	870	5	60	19	930	31	236	18	91
Total (other than train accidents).....	48	1,702	9	84	57	1,786	120	3,368	47	1,388
Total all classes.....	90	3,377	20	279	110	3,656	225	4,086	60	1,577

^a The casualties to passengers have been divided into three classes. Class a includes all ordinary passengers. Class b includes passengers traveling on freight trains. Class bb includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight.

Accidents to employees resulting in slight injuries, which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident, are not reported.

^b Table No. 1 is continued on the next page.

TABLE NO. 1.—*Casualties to persons—July, August, and September, 1908—Continued.*

	Yard trainmen (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	1	64	8	66	58	546	101	1,571
Derailments.....	5	31	3	34	65	336	75	1,158
Miscellaneous train accidents, including locomotive boiler explosions.....		35	3	17	15	272	15	318
Total train accidents.....	6	130	14	117	138	1,154	191	3,046
Coupling or uncoupling.....	16	256	3	11	39	573	39	573
While doing other work about trains or while attending switches.....	1	579	6	589	19	3,524	19	3,524
Coming in contact with overhead bridges, structures at side of track, etc.....	1	91	.....	13	17	344	18	367
Falling from cars or engines or while getting on or off.....	27	655	30	366	127	2,548	164	3,381
Other causes.....	16	84	219	4,313	284	4,724	303	5,654
Total (other than train accidents).....	61	1,665	258	5,292	486	11,713	543	13,499
Total all classes.....	67	1,795	272	5,409	624	12,867	734	16,545

The very marked diminution in the number of casualties of all kinds, which continued through the last three quarterly bulletins, and which was due to the falling off in railroad traffic and other well-known collateral causes, seems now to be checked. The last bulletin (No. 28) was for the April-June quarter, which always is lighter in traffic and in accidents than the other quarters of the year; and the present bulletin would therefore show casualty lists heavier than that one under ordinary circumstances; but the difference between that quarter and this is made larger, without doubt, by reason of the fact that between July 1 and October 1 the business of the country began to recover from the depression which began in October, 1907.

The totals of the present record, as shown in Table 1A, below, are indeed far smaller than in the corresponding quarter of a year ago (Bulletin 25), and it is to be hoped that this apparent increase in the safety of railroad travel and railroad operation is not wholly to be accounted for by the decrease in the number of trains run or in passengers carried or employees in service.

But in comparing Bulletin 29 with Bulletin 28 the main lesson which is to be derived from all accident statistics—the need of preventing accidents in the future—again confronts us. The number of employees killed increased 17 per cent; employees killed in train accidents, 39 per cent; and passengers killed from causes other than train accidents, 30 per cent; but the increase in the number of passengers killed in train accidents was no less than 307 per cent. Nothing could more clearly enforce the lesson of the necessity of heeding the record of the causes of collisions as set forth in Table 2A, for four-fifths of the passengers killed in train accidents

were the victims of collisions. Of the eight most serious collisions (Nos. 1, 2, 5, 6, 7, 8, 9, and 11), five occurred on lines where the block system was not in use; one, No. 8, on a line where it was ostensibly in use, but was abandoned temporarily to save the time of passenger trains; and one, No. 1, on a line where it appears to have been used "permissively" for freight trains carrying passengers (drovers); leaving only one, No. 5, which appears to have been in no wise due to lack of the space-interval rules.

TABLE NO. 1A.—*Comparison of principal items.*

	Bulletin 20.	Bulletin 28.	Bulletin 25.
1. Passengers killed in train accidents.	53	13	110
2. Passengers killed, all causes.	110	57	195
3. Employees killed in train accidents.	138	99	236
4. Employees killed in coupling.	39	30	57
5. Employees killed, all causes.	624	534	1,144
6. Total passengers and employees killed, all causes.	734	591	1,339

The total number of collisions and derailments in the quarter now under review was 2,567 (1,170 collisions and 1,397 derailments), of which 192 collisions and 184 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$1,950,408. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

[NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.]

	Number.	Loss.	Killed.	Injured.
Collisions, rear.	213	\$233,733	15	500
Collisions, butting.	129	203,376	55	683
Collisions, train separating.	123	53,067	2	42
Collisions, miscellaneous.	705	282,148	29	346
Total.	1,170	772,324	101	1,571
Derailments due to defects of roadway, etc.	253	165,851	11	183
Derailments due to defects of equipment.	621	534,213	15	205
Derailments due to negligence of trainmen, signalmen, etc.	79	52,149	5	130
Derailments due to unforeseen obstruction of track, etc.	73	86,289	16	127
Derailments due to malicious obstruction of track, etc.	17	13,139	5	25
Derailments due to miscellaneous causes.	354	326,443	23	488
Total.	1,397	1,178,084	75	1,158
Total collisions and derailments.	2,567	1,950,408	176	2,729

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE 2A.—Causes of twenty-three prominent train accidents (Class A).

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	R	F and F.....	3	1	\$1,860	19	Excessive speed and negligent flagging. Occurred 3.40 a. m.; 3 passengers in caboose killed.
2	M	F and F.....	4	40	3,000	29	Confusion of orders. (See note in text below.)
3			0	4	5,283	24	Train approached station 3 a. m. at uncontrollable speed. Air brakes not properly applied; one angle cock closed; cause of this not discovered.
4	M	F.....	0	0	5,300	22	Train separated and rear part ran into forward part. Cause of parting not discovered. Only 14 cars out of 37 cars had air brakes working. Whole crew held at fault for failure to test brakes.
5	M	P and P.....	7	20	5,760	5	Engineman disregarded signals at crossing. (See note in text below.)
6	B	P and F.....	3	37	6,000	28	Agent failed to deliver order; trusted an inexperienced assistant, who made only three copies of order when he should have made five.
7	B	P and F.....	20	14	11,000	52	Westbound freight encroached on time of regular eastbound passenger. Freight reached entrance to siding at meeting point at 8.01 or 8.02, one or two minutes behind passenger's time, instead of five minutes before that time, as required by rule. Men in charge of freight admitted before coroner that regulation speed from last station, as shown on time table, was not sufficient to enable them to reach the meeting point at 8 o'clock. Passenger engineman's view of road was obscured by snow-storm.
8	B	P and F.....	5	49	12,000	2	Mistake in writing telegraphic order. (See note in text below.)
9	B	P and F.....	4	2	13,300	53	Operator accepted order after train had passed. (See note in text below.)
10	R	F and F.....	0	0	16,000	20	Excessive speed.
11	B	P and P.....	8	59	22,297	1	Operator accepted order after train had passed. (See note in text below.)
Total.....			54	226	101,800		

DERAILMENTS.

1	D	P.....	2	2	\$3,000	41	Malicious obstruction. A person was arrested and held for trial on a charge of murder.
2	D	P.....	2	0	3,200	37	Malleable-iron brake-lever jaw on tender broke, allowing rod to fall and throw wheel off track.
3	D	P.....	4	9	3,300	13	Washout, due to flood from broken reservoir.
4	D	P.....	1	16	4,900	9	Track spread; cause of spreading not determined. Rails 100 pounds per yard, oak ties, broken-stone ballast, all in first-class condition. Train consisted of 2 electric locomotives, weighing 95 tons each, and 9 cars. Line straight. Train was running at regular speed.
5	D	F.....	2	0	10,000	61	Breakage of flange of wheel of tender.
6	D	F.....	0	0	11,000	31	Broken wheel. Wheel was put under a drop test and found to be of poor material.
7	D	P.....	2	60	12,000	62a	Undiscovered. Believed to have been fast running.
8	D	P.....	2	4	12,700	38	Worn rail on curve; curve, 5 degrees; superelevation, 4½ inches; speed, 40 miles an hour.
9	D	F.....	0	0	13,400	34	Broken truck.
10	D	F.....	0	0	14,100	18	Undiscovered; believed that a truck was broken when air brakes were suddenly applied on a deck-girder bridge 88 feet long.
11	D	P.....	0	38	16,393	58	Maliciously misplaced switch; speed, 50 miles an hour.
12	D	P.....	2	37	20,000	35	Burning bridge. Cause of fire not discovered. No person blamed.
Total.....			17	166	123,993		
Total collisions and derailments.....			71	392	225,793		

Collision No. 2, killing two passengers, was due to a confusion of orders by the conductor and motorman of an electric car (train No. 9). The case may be explained by supposing the movement of train No. 9 as eastward from A to B, C, D, E, F, and so on. Order No. 3 was issued directing train No. 9 to proceed to E. Later, order No. 5 was issued directing No. 9 to report at D; but the first order was received last and the conductor and motorman acted on it, and thus the collision occurred between D and E. Order No. 5 was received by the conductor and motorman of No. 9 at A, direct by telephone from the dispatcher. Proceeding to B, they received order No. 3 from the conductor of a westbound train, to whom the dispatcher had sent it at C six minutes before he sent order No. 5. The conductor and engineman of No. 9 are held negligent in not observing the sequence of numbers on the orders and in not noticing the recorded times, which showed that the order received last had been sent first. The dispatcher, in sending order No. 5, did not put into it the words "instead of," and in telephoning it to the conductor and motorman of No. 9 he said nothing to them about having issued an earlier order which was to be disregarded.

Collision No. 5 occurred at a crossing where two lines, both belonging to the same railroad company, cross each other diagonally. Passenger train No. 7, approaching the crossing on line B at excessive speed, was thrown off the track at the derailing switch and ran upon the ground across line A, stopping with the smoking car athwart the main track of A, in which position it was wrecked by the engine of train No. 4 on line A. Seven passengers were killed and 19 passengers and one trainman were injured. The engineman of train No. 7, who is a man of experience, appears to have been oblivious to the signals. The derailing switch was 281 feet from the crossing and his engine ran to a point 170 feet beyond the crossing. The signal was 50 feet in the rear of the derailing switch and was in plain view for 885 feet farther in the rear. It is estimated that the speed of the train when derailed was at least 50 miles an hour, though the schedule speed of this train over that part of the line is only 22 miles an hour, the rate being limited by a city ordinance. The engineman of No. 7 "claimed" that the signal was clear when he first came within view of it, but the superintendent regards the evidence as conclusive that it was in the stop position and had been so for some time before this train came within sight of it.

Collision No. 8, causing five deaths, was due to an error in a train order. It was between an eastbound passenger train and a westbound freight. The engines and cars of both trains were badly damaged. The order as issued directed the passenger train to wait at B. until "five fifteen 5.15 a. m." This authorized the freight to run to B. if it had time to reach that point in time to properly clear the passenger

train. The order as delivered to the freight read "five fifty-five 5.55 a. m." instead of "five fifteen 5.15 a. m.," and the freight therefore encroached on the time of the passenger, having apparent authority to do so, to the extent of forty minutes, and in consequence met the passenger east of B. The operator at L., who took the order for the freight, destroyed the first order she made and in place of it wrote a second copy. In making this second copy the error occurred. This operator had been in the service of the company at L. four days. She had had instruction in a telegraph school twelve months and had been examined by the chief train dispatcher after being under the tutelage of a station operator eleven days. It is assumed that the first order written out at L. was correctly worded, as the operator had repeated it to the dispatcher. Where a telegraphic order is rewritten it is the duty of the operator, under the rules, to again repeat it by telegraph to the dispatcher, but this was not done. The telegraph block system is in use on the line where this collision occurred, but the block stations are far apart and to avoid delay to the trains the block system was supplanted by a time order, as above explained. With the block system thus modified or suspended the westbound freight train, under the rules, would be required to be sidetracked at some station before the passenger train was due, and the passenger train in this case being behind time the order was issued so as to permit the freight train to go farther west before turning out.

In collision No. 9 there was negligence by both dispatcher and operator. It occurred about 1.30 a. m. The operator accepted an order for the passenger train after it had passed his station. By reason of having been asleep, or otherwise negligent, he did not know whether the passenger train had passed or not, and assumed that it had; assumed that the dispatcher would not offer the order to him if the train had already passed. The order was sent on Form 19, contrary to the rule, and it was acknowledged in a form applicable only to Form 31; and the dispatcher did not require the operator to display his signal before taking the order; for these irregularities both men are blamed. The dispatcher had ground for suspicion that the operator had not been vigilantly attending to duty and is blamed for not taking extra precautions on that account. The dispatcher had had seven years' experience as such. The operator, 23 years old, had served on this road less than two months but is said to have had several years' experience elsewhere.

Collision No. 11, causing fatal injury to 5 passengers, was due to the acceptance by a station operator of a train order for a train which had passed his office. Train No. 3, westbound, and No. 12, eastbound, held orders to meet at K. When No. 12 arrived at K., No. 3 being then at L., the next station east and 7 miles distant, the train dispatcher undertook to change the meeting point

from K. to L. This order was accepted by the operator at L. before he had made certain that No. 3, which had passed his train-order signal, had been held—a violation of the rule. The train dispatcher then gave the order to No. 12 at K., which immediately proceeded to act upon it, and before the operator at L. could reach No. 3, which was at the west end of the siding, it left there for K. under the order originally given, and the trains met at a point where, by reason of the curvature, neither train could be seen from the other until they were quite close together. The operator at L. is held at fault in accepting the order after the train had passed his train-order signal, and the dispatcher is held at fault for giving the order to No. 12 without knowing definitely that No. 3 had been held. The services of these men had been satisfactory up to the time of this collision.

TABLE No. 3.—*Causes of accidents to employees in coupling and uncoupling cars.*

Subclass.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		27		15		29		
2	Adjusting coupler, cars accidentally started.....	1	4	1	2		11		
3	Careless manipulation of uncoupling lever.....		2		3		9		1
4	Cars not equipped with automatic coupler.....		2		2		1		
5	Coupler broken, using link and pin or chain.....	1	6		3	1	3		
6	Coupling damaged cars.....	1	9		2	2	9		
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		4		2	2	1		
8	Coupling with chain or other emergency appliance because of uneven track.....								
9	Coupling or uncoupling safety chains.....				1		4		1
10	Fingers or hand caught between uncoupling lever and body of car.....		32		21		55		5
11	Uncoupling without using lever (unnecessary).....		5		5		4		
12	Uncoupling without using lever, uncoupling lever not in working order.....		20		8		16		2
13	Foot caught in frog, switch, or guard rail.....		1	3	2	2	6		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....		13		6	2	13		
15	Opening knuckle when cars were near together, engine accidentally started.....		1		2	2	3	1	
16	Opening knuckle, part of defective coupler fell on foot.....		3		4		5		1
17	Opening knuckle, lost footing.....	1	6	1	3	1	10		
18	Riding on car to uncouple, slipped off.....	4	6	3	2	1	9		
19	Struck by object at side of track.....		1		5		9		
20	Caught by unexpected movement of car, due to slack running in.....		23		6		14		
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....		4			2	5		
22	Uncoupling moving cars and lost footing.....		6	1	1	1	13		
23	Parts hard to move, causing delay.....		4		2		6		
24	Went between cars unnecessarily and contrary to rule.....	1	8		8		15	2	1
25	Hand caught between projecting load and end of next car.....		2		1		2		
26	No witness (fatal injury).....			2					
27	Other causes.....		9		2		4		
28	Unexplained.....								
	Total.....	9	198	11	108	16	256	3	11

Details of injuries included in Table 3, subclass 27.

- J. 1. Standing on car holding up lever; load of trucks shifted.
 J. 2. Stepped on knuckle.
 J. 3. Lump of coal fell from car.
 J. 4. Stepped on piece of glass.
 A. 1. Lever flew up, cutting eye.
 A. 2. Arranging knuckles and caught hand.
 A. 3. Struck by stick of timber used as chock under car wheel.
 A. 4. Struck hand against corner of car.
 A. 5. Lever flew over.
 A. 6. Lumber fell off car.
 S. 1. Struck in face by lever.
 S. 2. Stepped on nail.
 S. 3. Struck elbow against end sill of car.
 S. 4. Scalded when cylinder cocks were suddenly opened.
 S. 5. Struck knee against car.

TABLE NO. 3A.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Trainmen.	Trainmen in yards.	Yard trainmen.	Other employees.
Loss of feet.....	3		6	
Loss of legs.....	3			
Loss of arms.....	3			1
Loss of hands.....	1	1	2	
Loss of fingers.....	11	7	6	
Loss of toes.....	4	2	1	
Fractured skull.....				
Fractured leg.....	3	1	2	1
Fractured arm.....	5	2	2	1
Fractured collar bone or ribs.....		2	3	
Fractured other bones.....	5	6	5	
Contusion of head or body.....	14	13	36	1
Contusion or laceration of feet.....	19	14	30	1
Contusion or laceration of toes.....	10	3	7	
Contusion or laceration of legs.....	8	5	18	
Contusion or laceration of arms.....	7	3	13	
Contusion or laceration of hands.....	24	15	36	3
Contusion or laceration of fingers.....	64	27	64	3
Dislocation.....	3	1	2	
Internal injuries.....	4		4	
Sprains.....	2	4	17	
Miscellaneous.....	5	2	2	
Total injuries.....	198	108	256	11
Killed.....	9	11	16	3
Total killed and injured.....	207	119	272	14

RECAPITULATION.

Total killed.....	39
Total injured.....	573
Total killed and injured.....	612

TABLE NO. 4.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....		9		6		2		
	2 Ice or snow.....								
	3 Parting of train.....	2	16		7	1	6		
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	4	54	1	25	1	63	3	9
	5 While setting brakes.....	5	33		14	2	49		1
	Fell from—								
	6 Coal car.....		11		7		4		4
	7 Freight car other than box or coal car.....	2	42	1	13		10	2	25
	8 Engine or tender.....	12	124	2	64	5	43	2	26
C7	9 Passenger car.....		10		2		2		1
	10 Engines, tenders, or cars (all kinds) not in motion.....		53		32		17	1	64
	11 Miscellaneous causes.....	11	166	1	44		145	3	65
	12 Not clearly explained.....	15	33	3	15	9	30	1	21
	13 Slipped getting on moving trains or cars.....	1	101		61	2	70	10	55
	14 Jumping off moving trains.....	2	133		91	2	68	4	55
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....		37		7		8		5
	16 Fell from engines or cars by reason of defective hand-holds and sill steps.....		51		26		49		2
	17 Getting on or off moving engine.....	5	141	3	96	5	88	4	33
	18 Caught in frog, guard rail, or switch.....		1		2		1		
	Total.....	59	1,015	11	512	27	655	30	366

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A), showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 17 ^arecords one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring at 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches, and a collision which was due to failure of "controlled manual" block signal working.

Bulletin No. 18 shows total casualties much larger than in the preceding quarters, due largely, no doubt, to an enormous increase in traffic. Many accidents are reported in which the men had been on duty excessively long hours. One collision, killing 17 persons, was due to the error of an engineman of five months' experience, who ran past five warning signals. Another collision, killing 10 persons, was due to the failure of the men in charge of a freight train to identify opposing passenger trains. One derailment of a passenger train, killing 13 persons, was reported as due to some cause that could not be discovered.

Bulletin No. 19 is like Bulletin 18 in showing a large number of casualties. One butting collision, due to failure of train dispatching, caused 34 deaths and 24 injuries and \$50,000 damages, besides the damages for deaths and injuries of persons. One collision was due to the negligence of men who had been worked flagrantly long hours. Particulars are given of a number of collisions due to complicated and unusual causes.

Bulletin No. 20 shows total deaths greater than in the corresponding quarter of the previous year, but the number of passengers and employees killed in train accidents was considerably smaller. The most serious accident in this bulletin was a butting collision of passenger trains, due to misinterpretation of a dispatcher's order by a pilot; 10 persons killed, 38 injured. One derailment, unexplained, train running slowly, caused 9 deaths and 18 injuries.

Bulletin No. 21 contains the record of only one train accident—a collision—in which more than 10 persons were killed, but the total of casualties of all classes are large, no improvement being shown over preceding quarters. Number of passengers killed in train accidents, 52. One collision, killing 17 and injuring 56, was due to confusion of telegraphic orders; one derailment, killing 9 and injuring 43, was at a misplaced switch, and another, killing 7 and injuring 40, was due to excessive speed.

Bulletin No. 22 shows 180 passengers killed in train accidents—a number larger than that in any other bulletin except No. 13. One rear collision in the District of Columbia caused the death of 43 passengers and the injury of 63. A butting collision killed 43 persons and injured 155, the bodies of the killed being consumed by fire. In the derailment of a passenger train at a drawbridge 57 persons were killed and 36 injured.

Bulletin No. 23 shows 126 passengers killed in train accidents. It contains the record of two collisions, killing 41 persons, and two derailments, killing the same number. The number of employees killed in coupling accidents is 25 per cent less than in the last preceding quarter.

Bulletin No. 24, though representing that quarter of the year which is usually the lightest in traffic, showed all of the principal totals of casualties larger than in the same quarter of the year preceding, and the number of passengers killed in train accidents was very much larger. One derailment killed 33 persons and one collision 8. The tables for the year ending June 30, 1907, showed heavy increases in all items except accidents in car coupling and from striking against overhead obstructions, and the number of passengers killed and injured in collisions and derailments showed an alarming increase, the number of killed in

^a For notes on Bulletins 1-16, see Bulletin No. 17.

this class being 17 per cent higher than the very large total reported in the year ending June 30, 1905. A condensed list is given of 10 prominent accidents in the year ending June 30, 1907, to which are charged an aggregate of 291 deaths.

Bulletin No. 25 shows 110 passengers killed in train accidents, three collisions and one derailment being responsible for 80 deaths in this class. The number of passengers killed from other causes (mostly their own negligence) also shows a large increase. One of the most serious collisions was due to the misreading of a dispatcher's order, and another to a mistake in sending or receiving the order.

Bulletin No. 26 shows a marked decrease in casualties as compared with preceding quarters, a large falling off in railroad traffic having taken place. The list of "prominent" train accidents includes only three cases which may be classed as notable.

Bulletin No. 27 shows further marked decreases in casualties, incident to the large falling off in railroad traffic. The number of passengers and employees killed in train accidents (125) is the smallest since the monthly records were established. The most fatal accident in this quarter was a collision at a street crossing, where 8 passengers in an electric car were killed.

Bulletin No. 28 recorded the smallest number of passengers killed in train accidents (13) ever reported in the quarterly records. The total of passengers and employees killed in train accidents (112) was 13 less than the previous low record (125, Bulletin 27). Of the 13 passengers killed in train accidents, 7 were victims of a butting collision on an electric railroad.

ACCIDENT BULLETIN NO. 30

Collisions and Derailments of Trains
and
Casualties to Persons
on the Railroads of the United States

during the months of
October, November, and December, 1908

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



WASHINGTON
GOVERNMENT PRINTING OFFICE
1909



THE INTERSTATE COMMERCE COMMISSION.

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JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS

IN THE UNITED STATES DURING THE THREE MONTHS
ENDING DECEMBER 31, 1908.

The number of persons killed in train accidents during the months of October, November, and December, 1908, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 184 and of injured 2,924. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off cars, etc., bring the total number of casualties up to 17,644 (798 killed and 16,846 injured). These accidents are classified in the following table. These reports deal only with (a) passengers and (b) employees on duty.^a

TABLE No. 1.—*Casualties to persons, October, November, and December, 1908.*^{b c}

Causes.	Passengers (a and b).		Persons carried un- der agree- ment or contract (bb).		Total (a, b, and bb).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	15	835	4	97	19	932	51	480	18	152
Derailments.....	14	430	1	27	15	457	30	228	2	43
Miscellaneous train accidents, including loco- motive-boiler explosions.....	.....	8	.....	6	.....	14	11	200	.....	49
Total train accidents.....	29	1,273	5	130	34	1,403	92	908	20	244
Coupling or uncoupling.....	.....	.....	.....	.....	.....	.....	16	207	11	144
While doing other work about trains or while attending switches.....	.....	.....	.....	.....	.....	.....	3	1,989	4	645
Coming in contact with overhead bridges, structures at side of track, etc.....	1	3	.....	2	1	5	15	188	4	66
Falling from cars or engines or while getting on or off.....	41	754	8	16	44	770	61	1,109	26	567
Other causes.....	15	635	4	95	19	730	29	243	27	102
Total (other than train accidents).....	57	1,392	7	113	64	1,505	124	3,736	72	1,524
Total, all classes	86	2,665	12	243	98	2,908	216	4,644	92	1,768

^a The casualties to passengers have been divided into three classes. Class A includes all ordinary passengers. Class B includes passengers traveling on freight trains. Class BB includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight.

^b Table No. 1 is continued on next page.

^c Accidents to employees resulting in slight injuries which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported.

TABLE NO. 1.—Casualties to persons, October, November, and December, 1908—Cont'd.

Causes.	Yard trainmen (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	3	92	25	151	97	875	116	1,807
Derailments.....	4	37	6	44	42	352	57	809
Miscellaneous train accidents, including locomotive-boller explosions.....	.....	24	.....	21	11	294	11	308
Total train accidents.....	7	153	31	216	150	1,521	184	2,924
Coupling or uncoupling.....	16	307	1	18	44	676	44	676
While doing other work about trains or while attending switches.....	3	749	9	565	19	3,948	19	3,948
Coming in contact with overhead bridges, structures at side of track, etc.....	2	90	3	12	24	356	25	361
Falling from cars or engines or while getting on or off.....	33	873	28	332	148	2,881	192	3,651
Other causes.....	25	120	234	4,091	315	4,556	334	5,286
Total (other than train accidents).....	79	2,139	275	5,018	550	12,417	614	13,922
Total, all classes	86	2,292	306	5,234	700	13,938	798	16,846

The number of passengers here recorded as killed in collisions and derailments, 34, is only two-thirds as large as in the last preceding quarter (when there were 8 notable collisions); and the present record, for the purposes of comparison, might fairly be reduced still further by deducting the 15 casualties charged to derailment No. 4, Table 2*a*, which, as will be seen, occurred under very unusual circumstances. Making this deduction the present record would be reduced from 34 passengers to 21 passengers, or exactly the same number as that shown in Bulletin No. 26, one year ago. In the present record the only accident which is notable, as regards fatalities to passengers, is collision No. 23; but there were two which together caused the deaths of 16 employees—collisions No. 10 and No. 26.

Aside from item No. 1, as noted in the foregoing paragraph, the figures given in Table No. 1*a*, below, show generally considerable increases when compared with the last preceding quarter, but decreases when compared with the corresponding quarter one year ago.

TABLE NO. 1*a*.—Comparison of principal items with last bulletin and with one year back.

	Bulletin 30.	Bulletin 29.	Bulletin 26.
1. Passengers killed in train accidents.....	34	53	21
2. Passengers killed, all causes.....	98	110	81
3. Employees killed in train accidents.....	150	138	199
4. Employees killed in coupling.....	44	39	77
5. Employees killed, all causes.....	700	624	1,011
6. Total passengers and employees killed, all causes.....	798	734	1,092

The total number of collisions and derailments in the quarter now under review was 2,684 (1,373 collisions and 1,311 derailments), of which 206 collisions and 130 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$1,940,133. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	303	\$339, 217	45	498
Collisions, butting.....	151	292, 124	43	581
Collisions, train separating.....	122	47, 336	1	68
Collisions, miscellaneous.....	797	351, 172	27	660
Total.....	1, 373	1, 029, 849	116	1, 807
Derailments due to defects of roadway, etc.....	242	138, 145	1	273
Derailments due to defects of equipment.....	629	437, 640	5	131
Derailments due to negligence of trainmen, signalmen, etc....	81	49, 757	11	64
Derailments due to unforeseen obstruction of track, etc.....	68	78, 003	24	127
Derailments due to malicious obstruction of track, etc.....	14	20, 548	3	47
Derailments due to miscellaneous causes.....	277	186, 191	13	167
Total.....	1, 311	910, 284	57	809
Total collisions and derailments.....	2, 684	1, 940, 133	173	2, 616

[NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.]

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE 2a.—*Causes of thirty-four prominent train accidents.*
COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	M	P and F.....	0	0	\$300	13	Collision at crossing at 2 a. m. Crossing not equipped with fixed signals. Passenger train, having stopped 200 feet from crossing, was started forward and ran into side of freight train, the engineman not seeing the freight cars.
2	M	F and F.....	1	0	865	14	Collision occurred in yard. Engineman of empty engine negligent. One passenger killed.
3	M	F and F.....	1	0	1, 700	40	Engine backing onto sidetrack bumped standing cars, which ran out on main track and collided with another train. Conductor and brakeman applied hand brakes, but were unable to prevent collision. One passenger killed.
4	R	F and P.....	4	14	2, 200	1	Passenger train standing at station run into at rear by following freight; passenger brakeman neglected flagging; freight was running at excessive speed. Four passengers killed.
5	R	F and F.....	0	1	2, 400	50	Two trains had been coupled together to get over a hill; were separated at the summit. Leading train had among its cars a dead engine, and by this operator at next station was deceived. He thought that there were 2 trains, and thereupon authorized the station in the rear to send on another train.

TABLE 2a.—Causes of thirty-four prominent train accidents—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
6	R	F and F.....	1	1	2,835	3	Standing train not protected by red signal; was run into by a train which was not properly controlled. One drover killed.
7	B	F and F.....	0	3	3,152	10	Operator accepted order after train had left. (See note in text below.)
8	B	F and F.....	0	7	3,739	39	Operator, having two orders, one Form 19, one Form 31, delivered Form 19 only. Operator in service at this place one week; had had ten years' experience elsewhere.
9	B	F and P.....	1	16	4,068	32	Freight train ran out of siding because not under control. (See note in text below.)
10	B	F and F.....	7	11	4,616	55	Conductor and engineman of freight held an order to run one hour and thirty minutes late; forgot the order and ran one hour and fifteen minutes late. Six carpenters and one brakeman killed.
11	B	P and P.....	2	11	6,075	31	Misreading of dispatcher's order. (See note in text below.)
12	B	P and F.....	0	25	7,314	7	Failure to observe wait order; conductor and engineman both apparently forgot that the order had been delivered to them.
13	B	F and F.....	2	4	8,000	8	Failure to observe wait order and failure of inferior train to clear time of superior five minutes.
14	B	F and F.....	2	5	8,300	38	Conductor accepted orders from operator and recdpted for them, yet left them in the office and moved his train regardless of their instructions.
15	B	P and F.....	0	9	9,000	33	Conductor and engineman, having an order that the second section of a train would be one hour late, carelessly assumed that both the first and second sections would be that much late.
16	M	F and F.....	0	0	9,600	15	Train backing in on siding pushed boarding cars out on main line; these ran $2\frac{1}{2}$ miles uncontrolled and collided with work train; wreck took fire and was burned up.
17	B	F and F.....	1	4	10,000	53	Conductor and engineman misread or assumed name of station in telegraphic order; order was plainly written and the two names were utterly unlike.
18	R	F and F.....	0	8	10,200	27	Failure to flag when backing out of siding.
19	B	P and F.....	1	7	11,020	6	Conductor and engineman saw engine 605 standing on sidetrack and mistook it for engine 602, which they were to meet.
20	B	F and F.....	4	3	12,148	37	Entire crew of northbound train forgot or ignored schedule of southbound.
21	B	P and F.....	1	47	12,550	52	Freight encroached on time of passenger train. Engineman disregarded schedule of passenger train. It was Christmas day and his ignoring of the passenger train was due to his mistaken impression that the day was Sunday, on which that passenger train did not run.
22	B	F and F.....	2	5	14,700	40a	Operator reported that an extra train had passed when in fact it had not arrived; dispatcher acted on this misinformation.
23	B	F and F.....	1	4	15,200	34	Engineman forgot order. (See note in text below.)
24	R	P and P.....	8	27	20,000	24	Engineman disregarded time interval. Eight passengers killed. (See note in text below.)
25	R	P and F.....	0	7	21,145	25	Freight train, delayed while entering sidetrack, encroached on time of following passenger train. Report indicates that this freight had left last preceding station when there was not sufficient time; so that the delay at the sidetrack was not the only contributing cause of the collision.
26	R	F and F.....	9	4	24,700	30	Runaway; mismanagement of air brakes on 79-foot descending grade. Nine employees in work train; killed.
Total, collisions.....			48	218	225,827		

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

TABLE 2a.—Causes of thirty-four prominent train accidents—Continued.

DERAILMENTS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
1	D	F.....	2	13	\$250	20	Caboose occupied by track laborers overturned by wind.
2	D	P.....	1	6	2,300	66	Misplaced switch.
3	D	F.....	1	0	2,500	63	Broken flange. One passenger killed.
4	D	P.....	15	15	5,000	18	Track destroyed or weakened by fire. (See note in text below.)
5	D	P.....	0	13	5,644	21	Rail maliciously removed.
6	D	F.....	2	0	6,000	22	Switch maliciously misplaced. Engineman and fireman killed.
7	D	F.....	0	0	6,990	68	Log on car projected and struck and demolished bridge; bridge and 9 cars fell to river.
8	D	P.....	0	25	11,984	19	Trestle bridge weakened by fire. Engineman saw smoke a half mile away but misjudged its location. Superintendent apparently does not blame engineman, but the track department is held blame-worthy for not having burned weeds and grass to safeguard bridge against fire.
Total, derailments ...			21	72	40,678		
Collisions and derailments.....			69	290	266,505		

Derailment No. 4, causing the death of 15 persons, occurred near Metz, Mich., on the Detroit and Mackinac Railway, October 15, in the midst of extensive forest fires, and its immediate cause was the distortion of the track by the heat from a pile of burning sleepers, which lay near the track. The train, consisting of an engine and 6 freight cars, had been made up hastily to carry to a place of safety the inhabitants of a small village (Metz), this being the only chance of saving their lives. The atmosphere was filled with smoke so dense that the engineman could not see far ahead, and there was great danger; but it was impossible to go in the other direction, and it would have been fatal to remain at Metz. The refugees, numbering about 75, were in a steel gondola car. When the engine was derailed, about 1½ miles from Metz, in consequence of the weakness or displacement of the track, the cars, of course, could not be moved farther, and thus were left close to the burning sleepers and at the mercy of the flames; and 12 persons in the gondola car, unable to escape, were burned to death. One man, riding on the engine, escaped from the engine, but was burned to death on the ground a few feet away. Two trainmen were killed, and the list of injured persons includes 13 refugees and 2 trainmen. One of these latter, Conductor John Kinville, was severely burned in trying to save some of the persons in the gondola car. In the accident record these victims, except those who were employees of the railroad, are classed as passengers;

but in view of the peculiar circumstances of the case this note is added to explain that the deaths and injuries do not come within the ordinary classification. It does not seem proper, however, to class the refugees as trespassers, and, therefore, the compiler has not felt at liberty to exclude the figures from the record.

Collision No. 24, killing 8 and injuring 27 passengers, was due to disregard of the 10-minute time-interval rule. Both trains were passenger trains, southbound, one due to leave S at 7 a. m. and the other at 7:30 a. m. The latter train came on to the main line from a branch at this point. The leading train was 30 minutes late leaving S. The second train was recorded by its conductor as leaving S at 7:30, which was exactly the time that the leading train left; but from testimony given before a coroner it appears that the actual time of departure was 7:35, making an interval of 5 minutes between the two trains. The rule requires that this time interval shall be 10 minutes. The junction being a registering station, the station agent or operator was not required to hold the second train to keep it 10 minutes behind the first, but this duty rested on the conductor and engineman, who were required always to examine the train register before leaving junctions.

The collision occurred at L, which is $17\frac{1}{2}$ miles south of S. According to the men on the leading train, it occurred at 8 a. m., indicating that this train had run about 7 minutes faster than its schedule. According to the men on the other train, it occurred at 8:04 a. m. The leading train had made two stops of 30 seconds each for passengers; had stopped to open and close a switch at a station, and had reduced speed to about 10 miles an hour at one other point. It had started from L and was moving about 10 miles an hour when the collision occurred.

The second train was warned twice by drawbridge tenders of its proximity to the leading train, but the report says that the engineman inquired of the draw tender why he was stopped, and, on being informed, replied with derisive remarks; and he passed the drawbridge without having received the proceed signal. The report says that this reckless conduct on the part of the engineman of the second train was repeated at the second drawbridge, and that the train was running at a high speed when it struck the leading train. Its engine crushed 3 cars of the leading train and damaged a fourth, and did not stop until it had run 635 feet beyond the point where it first struck. There was a dense fog at the time, making it impossible to see more than about 500 feet. The engineman says that he saw the preceding train about 500 feet before he reached it, but it is believed by the officers that he did not see it until his engine struck it. The evidence of two witnesses, one at L and one some distance back, is

quoted to show that the engineman was not keeping a good lookout. He was facing backward, and apparently talking with another engineman who was riding in the cab. The brakes of both trains were set automatically as soon as the collision occurred, rupturing the air pipes; but in spite of this the distance run was 635 feet, as before stated.

The schedule time of the second train from S to L, about 29 minutes, was 8 minutes less than that of the leading train.

Collison No. 7, occurring about 2 a. m., was due to misinformation given to the dispatcher by the operator at A. A freight train with 2 engines arrived at A at 1:20 a. m., and the operator, assuming that the helping engine was the regular engine of the train, made a mistake in reporting the numbers—the train being an extra freight, and trains being identified by the number of the engine—and continued to assert to the dispatcher that the regular engine of the train—that is, the train itself—had not arrived. Accepting this information, the dispatcher gave the right to the road to a train coming from the opposite direction. The operator in this case was 18 years old and had been in the service only 1 month. The dispatcher was 21 years old. He had been a dispatcher for about 6 months and an operator 4 years.

Collision No. 9 was between a southbound passenger train and a northbound local freight train. It occurred at 6:35 p. m., November 13. The freight train had entered the side track at the station to make way for the passenger train, but in consequence of the engine not being properly controlled the train ran through the side track and out upon the main line at the north end, and the collision occurred about 400 feet north of the north switch. The freight was to stop at that station long enough for the trainmen to eat supper, and the engineman had got off the engine a little distance short of the station, to go to a hotel. According to the testimony of this engineman the engine (moving) was left in charge of the fireman, but the fireman denies having received instruction to that effect, and he was on the front of the engine, covering the headlight, and therefore did not shut off steam or apply the brakes. The headlight being covered, the engineman of the passenger train did not see that the main track was obstructed until he was almost at the point of collision. The conductor of the freight train was also held at fault for allowing the train to move so far after it had entered the side track.

Collision No. 11 was due to a mistake of an engineman in reading a telegraphic order. This engineman, running southbound train No. 3, went past the appointed meeting station at full speed, having unaccountably taken the order to mean the next station south, the two names beginning with the same letter. The conductor had neglected to require the engineman to read the order aloud in his

presence. The conductor had read the order to the baggageman, but the baggageman appears to have taken no pains to keep the meeting place in mind, as the train passed that station without his knowing it.

The collision occurred $2\frac{1}{2}$ miles beyond the appointed meeting place. The northbound train, No. 4, was running faster than its schedule, the dispatcher having ordered it to reach the meeting point, if possible, 5 minutes ahead of its schedule time. For giving this order the dispatcher is blamed. All of the men at fault have been in the service several years, with good records, except the baggageman, who had been in the service only 1 year.

Collision No. 23 was caused by the engineman of the southbound train disregarding a meeting order and running $1\frac{1}{2}$ miles beyond the station where he should have met the northbound train. The engineman and conductor had both read the order, and the conductor, the flagman, and the fireman testify that they understood the meeting point to be as it was written in the order; but the engineman, although he received the order and read it with the others, got the impression, in some way, that it named another station farther on. The fact that the train was running beyond the meeting point was first discovered by the flagman. The testimony of the conductor concerning his endeavors to stop the train is confused; but at any rate he did not succeed in reducing the speed materially before the collision occurred. Both trains were running at about 30 miles an hour when they struck each other.

TABLE 3.—Causes of accidents to employees in coupling and uncoupling cars.

Subclass.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....	...	21	...	10	...	23	...	1
2	Adjusting coupler, cars accidentally started.....	1	8	1	3	3	12	...	2
3	Careless manipulation of uncoupling lever.....	...	5	...	2	...	4	...	1
4	Cars not equipped with automatic coupler.....	...	1	...	4	...	4	...	1
5	Coupler broken, using link and pin or chain.....	...	3	...	2	...	2	...	...
6	Coupling damaged cars.....	...	6	2	3	...	12	1	1
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....	...	4	...	...	...	9	...	1
8	Coupling with chain or other emergency appliance because of uneven track.....	...	...	...	...	...	...	...	...
9	Coupling or uncoupling safety chains.....	...	...	...	2	1	8	...	2
10	Fingers or hand caught between uncoupling lever and body of car.....	...	41	...	30	...	55	...	3
11	Uncoupling without using lever (unnecessary).....	2	4	...	10	...	6	...	...
12	Uncoupling without using lever, uncoupling lever not in working order.....	2	12	1	16	...	29	...	...
13	Foot caught in frog, switch, or guard rail.....	2	4	...	2	3	5	...	...
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	1	18	...	15	...	15	...	...
15	Opening knuckle when cars were near together, engine accidentally started.....	1	2	...	4	1	7	...	1
16	Opening knuckle, part of defective coupler fell on foot.....	...	6	...	3	...	7	...	...
17	Opening knuckle, lost footing.....	...	3	1	1	1	12	...	1
18	Riding on car to uncouple, slipped off.....	2	9	...	1	...	15	...	...
19	Struck by object at side of track.....	...	1	...	2	...	6	...	...
20	Caught by unexpected movement of car, due to slack running in.....	...	21	...	10	...	20	...	2
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	1	4	1	1	...	7	...	...
22	Uncoupling moving cars and lost footing.....	...	3	2	3	2	23	...	...
23	Parts hard to move, causing delay.....	...	7	...	2	...	4	...	...
24	Went between cars unnecessarily and contrary to rule.....	2	16	...	10	2	11	...	1
25	Hand caught between projecting load and end of next car.....	...	...	...	1	...	1	...	...
26	No witness (fatal injury).....	2	...	3	...	3	1	...	...
27	Other causes.....	...	7	...	5	...	5	...	1
28	Unexplained.....	...	1	...	2	...	4	...	...
Total.....		16	207	11	144	16	307	1	18

Details of injuries included in Table 3, subclass 27.

- O. 1. Foot caught between plank and brake beam.
- O. 2. Stepped on broken bottle.
- O. 3. Struck by lever.
- O. 4. Piece of scantling fell from top of car.
- O. 5. Struck head against side of car.
- O. 6. Shaker lever fell from tank of engine.
- O. 7. Piece of coal fell from car.
- O. 8. Air hose flew up.
- N. 1. Glove caught on knuckle.
- N. 2. Opening knuckle, caught hand.
- N. 3. Lump of coal fell off car.
- N. 4. Struck hand against angle cock.
- N. 5. Struck in face by lever.
- N. 6. Struck by air hose.
- N. 7. Struck by end sill of car.
- D. 1. Struck in eye by piece of iron broken off drawhead
- D. 2. Coat sleeve caught on bolt.
- D. 3. Lump of coal fell off tank.

TABLE 3a.—Nature of injuries to employees in coupling and uncoupling cars.

Injuries.	Train- men.	Train- men in yards.	Yard train- men.	Other em- ployees.
Loss of feet.....	3	1	4	.....
Loss of legs.....	1	.....	3	.....
Loss of arms.....	2	1	3	.....
Loss of hands.....	.....	2	1	.....
Loss of fingers.....	12	3	2	1
Loss of toes.....	1	2	1	1
Fractured leg.....	3	.....	.....	.....
Fractured arm.....	3	4	3	1
Fractured collar bone or ribs.....	3	1	12	1
Fractured other bones.....	7	6	8	1
Contusion of head or body.....	20	10	40	4
Contusion or laceration of feet.....	21	13	24	.....
Contusion or laceration of toes.....	5	5	9	1
Contusion or laceration of legs.....	6	4	19	3
Contusion or laceration of arms.....	11	8	15	.....
Contusion or laceration of hands.....	26	33	41	2
Contusion or laceration of fingers.....	67	40	84	1
Dislocation.....	.....	1	4	1
Internal injuries.....	4	4	6	1
Sprains.....	7	2	20	.....
Miscellaneous.....	5	4	8	.....
Total injuries.....	207	144	307	18
Killed.....	16	11	16	1
Total killed and injured.....	223	155	323	19

RECAPITULATION.

Total killed.....	44
Total injured.....	676
Total killed and injured.....	720

TABLE 4.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Sub- class.	Causes.	Train- men.		Trainmen in yards.		Yard trainmen (switch- ing crews).		Other employ- ees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	1	5	.....	3	.....	7	.....	.....
	2 Ice or snow.....	.....	5	.....	4	.....	8	.....	.....
	3 Parting of train.....	.....	20	.....	8	1	7	.....	2
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3	1	66	3	22	2	60	1	12
	5 While setting brakes.....	1	42	.....	30	4	64	.....	2
	Fell from—								
	6 Coal car.....	2	6	1	5	1	2	1	5
	7 Freight car other than box or coal car.....	4	43	2	19	.....	14	1	19
	8 Engine or tender.....	8	122	3	72	3	43	3	15
	9 Passenger car.....	2	11	.....	1	1	2	.....	3
	10 Engines, tenders, or cars (all kinds) not in motion.	.....	70	.....	40	.....	27	2	67
C7	11 Miscellaneous causes.....	10	179	2	58	6	202	3	60
	12 Not clearly explained.....	19	52	1	16	8	52	3	16
	13 Slipped getting on moving trains or cars.....	6	102	3	47	1	75	6	43
	14 Jumping off moving trains.....	4	133	4	86	.....	106	1	47
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	.....	44	.....	13	.....	11	.....	2
	16 Fell from engines or cars by reason of defective hand- holds and sill steps.....	.....	37	.....	21	.....	56	.....	4
	17 Getting on or off moving engine.....	3	166	7	119	5	135	7	34
	18 Caught in frog, guard rail, or switch.....	.....	6	.....	3	1	2	.....	1
	Total.....	61	1,109	26	567	33	873	28	332

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A), showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 17 records one collision, killing 6 and injuring 35 persons, and one derailment, killing 15 and injuring 28. The collision, occurring at 1 a. m., was due to gross negligence on the part of the men in charge of a freight train. The derailment was due to an open draw. The drawbridge was not provided with interlocked signals and the engineman was not adequately acquainted with the line of the road. A collision and a derailment are reported which were due to the lack of suitable detector bars at switches, and a collision which was due to failure of "controlled manual" block signal working.

Bulletin No. 18 shows total casualties much larger than in the preceding quarters, due largely, no doubt, to an enormous increase in traffic. Many accidents are reported in which the men had been on duty excessively long hours. One collision, killing 17 persons, was due to the error of an engineman of five months' experience, who ran past five warning signals. Another collision, killing 10 persons, was due to the failure of the men in charge of a freight train to identify opposing passenger trains. One derailment of a passenger train, killing 13 persons, was reported as due to some cause that could not be discovered.

Bulletin No. 19 is like Bulletin 18 in showing a large number of casualties. One butting collision, due to failure of train dispatching, caused 34 deaths and 24 injuries and \$50,000 damages, besides the damages for deaths and injuries of persons. One collision was due to the negligence of men who had been worked flagrantly long hours. Particulars are given of a number of collisions due to complicated and unusual causes.

^a For notes on Bulletins 1-16, see Bulletin No. 17.

- Bulletin No. 20 shows total deaths greater than in the corresponding quarter of the previous year, but the number of passengers and employees killed in train accidents was considerably smaller. The most serious accident in this bulletin was a butting collision of passenger trains, due to misinterpretation of a dispatcher's order by a pilot; 10 persons killed, 38 injured. One derailment, unexplained, train running slowly, caused 9 deaths and 18 injuries.
- Bulletin No. 21 contains the record of only one train accident—a collision—in which more than 10 persons were killed, but the total of casualties of all classes are large, no improvement being shown over preceding quarters. Number of passengers killed in train accidents, 52. One collision, killing 17 and injuring 56, was due to confusion of telegraphic orders; one derailment, killing 9 and injuring 43, was at a misplaced switch, and another, killing 7 and injuring 40, was due to excessive speed.
- Bulletin No. 22 shows 180 passengers killed in train accidents—a number larger than that in any other bulletin except No. 13. One rear collision in the District of Columbia caused the death of 43 passengers and the injury of 63. A butting collision killed 43 persons and injured 155, the bodies of the killed being consumed by fire. In the derailment of a passenger train at a drawbridge 57 persons were killed and 36 injured.
- Bulletin No. 23 shows 126 passengers killed in train accidents. It contains the record of two collisions, killing 41 persons, and two derailments, killing the same number. The number of employees killed in coupling accidents is 25 per cent less than in the last preceding quarter.
- Bulletin No. 24, though representing that quarter of the year which is usually the lightest in traffic, showed all of the principal totals of casualties larger than in the same quarter of the year preceding, and the number of passengers killed in train accidents was very much larger. One derailment killed 33 persons and one collision 8. The tables for the year ending June 30, 1907, showed heavy increases in all items except accidents in car coupling and from striking against overhead obstructions, and the number of passengers killed and injured in collisions and derailments showed an alarming increase, the number of killed in this class being 17 per cent higher than the very large total reported in the year ending June 30, 1905. A condensed list is given of 10 prominent accidents in the year ending June 30, 1907, to which are charged an aggregate of 291 deaths.
- Bulletin No. 25 shows 110 passengers killed in train accidents, three collisions and one derailment being responsible for 80 deaths in this class. The number of passengers killed from other causes (mostly their own negligence) also shows a large increase. One of the most serious collisions was due to the misreading of a dispatcher's order, and another to a mistake in sending or receiving the order.
- Bulletin No. 26 shows a marked decrease in casualties as compared with preceding quarters, a large falling off in railroad traffic having taken place. The list of "prominent" train accidents includes only three cases which may be classed as notable.
- Bulletin No. 27 shows further marked decreases in casualties, incident to the large falling off in railroad traffic. The number of passengers and employees killed in train accidents (125) is the smallest since the monthly records were established. The most fatal accident in this quarter was a collision at a street crossing, where 8 passengers in an electric car were killed.
- Bulletin No. 28 recorded the smallest number of passengers killed in train accidents (13) ever reported in the quarterly records. The total of passengers and employees killed in train accidents (112) was 13 less than the previous low record (125, Bulletin 27). Of the 13 passengers killed in train accidents, 7 were victims of a butting collision on an electric railroad.
- Bulletin No. 29 showed totals far smaller than the corresponding quarter one year previous, but the diminution in the number of casualties, which had continued during the year of depression, seemed to have been checked. The number of passengers killed in train accidents was 53, and there were 8 notable collisions.

JUL 1 1909

U. S.

Interstate Commerce Commission

Washington, D. C.

Accident Bulletin

No. 31

Railroad Accidents in the United States

During January, February, and March
1909



Washington

Government Printing Office

1909

ACCIDENT BULLETIN NO. 31

Collisions and Derailments of Trains and

Casualties to Persons

on the Railroads of the United States

during the months of

January, February, and March, 1909

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



WASHINGTON
GOVERNMENT PRINTING OFFICE
1909

THE INTERSTATE COMMERCE COMMISSION.

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JAMES S. HARLAN, of Illinois.
EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS

IN THE UNITED STATES DURING THE THREE MONTHS
ENDING MARCH 31, 1909.

The number of persons killed in train accidents during the months of January, February, and March, 1909, as shown in reports made by the railroad companies to the Interstate Commerce Commission under the "accident law" of March 3, 1901, was 177, and of injured 2,618. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 15,785 (663 killed and 15,122 injured). Accidents to employees resulting in slight injuries which do not prevent the injured employee from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported. These reports deal only with employees on duty and passengers. The casualties to passengers have been divided into three classes: Class *a* includes all ordinary passengers; class *b* includes passengers traveling on freight trains; and class *bb* includes persons who are customarily carried on trains under special arrangements, such as postal clerks, express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight. The reported accidents are classified in the following table:

TABLE NO. 1.—*Casualties to persons, January, February, and March, 1909.*

Causes.	Passengers (<i>a</i> and <i>b</i>).		Persons carried under agree- ment or contract (<i>bb</i>).		Total (<i>a</i> , <i>b</i> , and <i>bb</i>).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	22	622	9	82	31	704	38	296	11	111
Derailments.....	6	625	.....	96	6	721	40	230	4	29
Miscellaneous train accidents, including loco- motive boiler explosions.....	.....	35	.....	4	.....	39	10	194	3	37
Total train accidents.....	28	1,282	9	182	37	1,464	88	720	18	177
Coupling or uncoupling.....	.....	.....	.....	.....	.....	.....	14	161	8	101
While doing other work about trains or while attending switches.....	.....	.....	.....	.....	.....	.....	9	1,674	9	578
Coming in contact with overhead bridges, structures at side of track, etc.....	.....	2	.....	.....	.....	2	10	112	3	45
Falling from cars or engines or while getting on or off.....	28	652	.....	18	28	670	42	966	15	507
Other causes.....	13	520	2	89	15	609	22	214	19	107
Total (other than train accidents).....	41	1,174	2	107	43	1,281	97	3,127	54	1,338
Total, all classes.....	69	2,456	11	289	80	2,745	185	3,947	72	1,515

TABLE NO. 1.—*Casualties to persons, January, February, and March, 1909—Continued.*

Causes.	Yard trainmen (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	13	77	8	73	70	557	101	1,261
Deraillments.....	2	19	10	55	56	333	62	1,054
Miscellaneous train accidents, including locomotive boiler explosions.....	1	17	.....	16	14	264	14	303
Total train accidents.....	16	113	18	144	140	1,154	177	2,618
Coupling or uncoupling.....	20	257	2	16	44	535	44	535
While doing other work about trains or while attending switches.....	1	698	5	552	24	3,502	24	3,502
Coming in contact with overhead bridges, structures at side of track, etc.....	1	69	3	14	17	240	17	242
Falling from cars or engines or while getting on or off.....	26	773	20	338	103	2,584	131	3,254
Other causes.....	23	101	191	3,940	255	4,362	270	4,971
Total (other than train accidents).....	71	1,898	221	4,860	443	11,223	486	12,504
Total, all classes.....	87	2,011	239	5,004	583	12,377	663	15,122

In Bulletin No. 27, one year ago, every important item showed marked decreases from the earlier records with which it was compared, the depression in business having continued six months. In some items the present record continues that favorable showing, though it covers a period in which considerable recovery of traffic had been accomplished. The comparisons are shown in the table next following. The present list of passengers killed in train accidents is swelled by one notable collision (Table No. 2a, No. 13).

TABLE NO. 1a.—*Comparisons of principal items with last bulletin and with one year back.*

	Bulletin 31.	Bulletin 30.	Bulletin 27.
1. Passengers killed in train accidents.....	37	34	21
2. Passengers killed, all causes.....	80	98	72
3. Employees killed in train accidents.....	140	150	104
4. Employees killed in coupling.....	44	44	44
5. Employees killed, all causes.....	583	700	656
6. Total passengers and employees killed, all causes.....	663	798	725

The total number of collisions and derailments in the quarter now under review was 2,284 (1,042 collisions and 1,242 derailments), of which 168 collisions and 145 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$1,847,202. Given more in detail, these facts appear as below:

TABLE NO. 2.—*Collisions and derailments.*

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	197	\$191,111	16	347
Collisions, butting.....	125	260,205	54	426
Collisions, train separating.....	70	22,806	2	20
Collisions, miscellaneous.....	650	298,100	29	468
Total.....	1,042	772,222	101	1,261
Derailments due to defects of roadway, etc.....	260	225,948	6	453
Derailments due to defects of equipment.....	563	430,466	3	134
Derailments due to negligence of trainmen, signalmen, etc....	82	48,007	6	75
Derailments due to unforeseen obstruction of track, etc.....	93	140,261	17	82
Derailments due to malicious obstruction of track, etc.....	11	45,254	12	74
Derailments due to miscellaneous causes.....	233	185,044	18	236
Total.....	1,242	1,074,980	62	1,054
Total collisions and derailments.....	2,284	1,847,202	163	2,315
Total for same quarter of 1908.....	2,632	1,977,419	114	2,455
1907.....	3,991	3,536,110	355	4,459

[NOTE.—Collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported.]

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE NO. 2a.—*Causes of 29 prominent train accidents.*

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	B	F and F.....	0	0	\$1,394	54	Order delivered by dispatcher at his own office to conductor gave wrong name of station in clause extending the right of the train and thus allowed train to encroach on right of opposing train.
2	B	F and F.....	0	1	2,925	12	Empty engine ran past train order signal indicating stop. This was a new signal just put in service; old signal had not been taken down; engineman and fireman in charge of this train had been off duty thirty days and so were not acquainted with situation; but the change of signals had been duly bulletined.
3	B	F and F.....	0	1	3,500	46	Dispatcher, in service of this road eight months, gave order to inferior train before he had restricted the superior. Had two years experience elsewhere.
4	B	F and F.....	2	1	4,106	50	Occurred 1 a. m. Operator gave clear signal when he should have stopped train for an order which he held. It is believed that the operator had been asleep and on awakening gave the clear signal without due reflection.
5	B	F and F.....	1	3	4,565	51	Engineman ran past meeting station; 3.40 a. m.; whole crew of train held blameworthy for not having been attentive to all conditions approaching stations. Engineman was asleep.
6	B	P and F.....	0	46	5,200	5	Freight train, at meeting point, encroached on time of opposing freight, also of passenger train; passenger train also disregarded orders by approaching station not under control, passing station at 9.28, though it had been ordered to wait at that point for freight until 9.30.

TABLE No. 2a.—Causes of 29 prominent train accidents—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
7	B	F and F.....	2	6	\$5,600	28	Operator 23 years old, in service at this point two weeks, though having had three years' experience elsewhere, made mistake in name of station in copying dispatcher's telegraphic order. Believed that operator repeated the order to dispatcher as copied and that dispatcher failed to notice error.
8	B	P and P.....	0	8	7,500	4	Engineman of westbound train forgot part of order telling him to take siding at meeting station and met eastbound train on main line.
9	B	P and F.....	0	27	7,995	7	Engineman of passenger train, in reading schedule of opposing train, took the time against wrong station; conductor had trusted to his memory as to the time, but a change of ten minutes had been made in the schedule in question, and the conductor's memory proved defective.
10	B	F and F.....	4	2	8,200	9	Conductor and engineman of the northbound train neglected to check register. (See note in text below.)
11	M	P and F.....	7	4	9,000	31	Occurred at 2.50 a. m. Engine standing on main track near station struck by approaching passenger train. Switch tender at entrance of yard had given clear signal to approaching passenger train wrongfully. Engineman and fireman of standing engine also held blameworthy for not having seen that they were properly protected. There was a fog at the time.
12	B	F and F.....	0	4	12,200	53	Operator received an order giving a train right over train 64, but the order which he delivered named train 84. It appears that the operator did not deliver the message which he had originally written, but made a new copy, and it was in making the new copy that the error occurred.
13	B	P and F.....	20	28	17,910	6	Westbound passenger train ordered to wait at "D" until 9.55, passed about 9.45 and collided with opposing train a short distance beyond station. Engineman's explanation is that he thought that the order gave him until 9.55 to reach the next station ahead; the conductor did not take sufficiently prompt measures to stop the train.
14	B	P and F.....	1	14	21,250	47	Misreading of instructions and false clear block signal. (See note in text below.)
15	R	P and P.....	3	30	27,888	1	Engineman ran past distant and home automatic block signals; also disregarded torpedo warnings. (See note in text below.)
Total.....			40	175	139,233		

DERAILMENTS.

1	D	P.....	0	7	\$2,000	66	Switch maliciously misplaced by a man who desired to kill the fireman of the train in question.
2	D	P.....	1	5	2,500	42	One passenger killed; cause undiscovered; speed, 18 miles an hour.
3	D	P.....	0	10	2,900	60	Tire of wheel of passenger car broken.
4	D	F.....	0	0	8,500	64	Runaway on steep grade, resulting in derailment at derailing switch at junction; air brakes not skillfully managed.
5	D	P.....	1	7	9,500	40	Switch loose by reason of loss of bolt; believed that the bolt was maliciously removed.
6	D	P.....	6	21	9,871	23	Misplaced switch due to broken switch lever; believed lever maliciously broken; derailed train struck employees' sleeping cars on side track, killing 6 employees.
7	D	F.....	0	0	10,110	43	Cause undiscovered.
8	D	F.....	0	0	10,730	19	Broken wheel flange; 100 feet of bridge destroyed.
9	D	P.....	3	95	12,600	36	Three passengers killed; broken rail; weight of rail, 85 pounds per yard; no flaw in rail; speed of train, 55 miles an hour.
10	D	P.....	1	84	13,000	17	Loose rail; track repairers at work on track had left rail insecurely spiked, yet did not signal train to reduce speed.

TABLE No. 2a.—Causes of 29 prominent train accidents—Continued.

DERAILMENTS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to en- gines, cars, and road- ways.	Reference to p. d.	Cause.
11	D	F.....	0	0	\$14,435	68	Runaway on steep grade of part of train (38 cars) which had been left without sufficient hand brakes set; air had leaked off; train had broken in three parts in consequence of sudden and powerful application of air brakes due to a leakage in train pipe; runaway cars were started by unskillful working in attempt to recouple the detached parts of the train.
12	D	P.....	1	37	17,300	39	Maliciously misplaced switch; speed, 45 miles an hour.
13	D	P.....	2	0	19,600	70	Landslide in cut, 20 feet deep, through conglomerate gravel; slope $\frac{1}{2}$ to 1; cut never gave trouble before; was inspected twelve hours previous to derailment, which occurred at 4 a. m.; four cars destroyed by fire, spread by escaping illuminating gas.
14	D	F.....	4	3	26,000	22	Enormous landslide; work train buried.
Total.....			19	269	159,046	.....
Collision and derail- ment.			59	444	298,279	.....

Collision No. 15, causing the death of three persons, was due to disregard of automatic block signals and of torpedoes, which had been placed on the rails near the block signal and which gave audible warning. The collision occurred on a foggy night. The second section of a westbound passenger train, following the first section of the same train, ran into the rear of the first section while it was at rest (having been stopped at a signal station) and two Pullman cars were destroyed. Measuring back from the point of collision, the home block signal was 2,768 feet distant, 550 feet farther east were the torpedoes, and 2,661 feet farther was the distant signal. The report says that the engine-man heard the torpedoes. The fireman, as well as the engineman, is held blameworthy, the rule requiring enginemen and firemen to call one to the other on approaching fixed signals. The speed of the train appears not to have been slackened by the engineman at all. The experience of the engineman was twenty-seven years and of the fireman six years. The automatic signals had been properly observed by the engineman of the first section of the train; also by the enginemen of other trains not long before.

Collision No. 14, a butting collision between a passenger train and a freight, causing the death of 1 trainman and the injury of 8 passengers and 6 trainmen, appers to have been due to gross negligence on the part both of a station telegraph operator and of the men in charge of one of the trains. The manual block system was in effect, and the operator was at fault in giving the signals, while at the same time meeting orders had been issued by the train dispatcher, which orders were disregarded by the conductor and engine-

man. The collision was between train 24 southbound, running from M to S and H, and a freight train northbound, running from H to S and M. The operator at S, after having authorized southbound train 24 to leave M, gave a clear signal for the northbound train to leave S for M, and the trains met about 4 miles north of S. The error of the conductor and engineman consisted in reading "No. 33" when the order actually read "No. 32."

Collision No. 10 was between two extra freight trains, a northbound and a southbound. The order making the meeting point for these trains gave the number of the engine and the name of the conductor of each train, Conductor D for the northbound and Conductor S for the southbound; and the collision was due to the wrongful assumption by Conductor D of the northbound train that a southbound train which he met at the appointed meeting station was that of Conductor S, whereas, in fact, it was another train. This assumption by Conductor D was based on his knowledge that the engine which he saw was one which had been used by Conductor S earlier in the same day; but in thus assuming the conductor neglected his plain duty to learn the actual number of the engine in order to see that it corresponded with the number written in the meeting order. Conductor D then gave his engineman instructions to proceed. This was contrary to the rule, under which the conductor and engineman should have checked the register at the station, in which were recorded the arrivals of all trains. Both trains were running from 25 to 35 miles an hour at the moment of the collision. The conductor and engineman at fault both had been in the service of the company for many years.

TABLE NO. 3.—Causes of accidents to employees in coupling and uncoupling cars.

Sub-class.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		13		7		20		
2	Adjusting coupler, cars accidentally started.....		4		2	2	6		1
3	Careless manipulation of uncoupling lever.....		5		3		9		
4	Cars not equipped with automatic coupler.....		2				2		1
5	Coupler broken, using link and pin or chain.....		4				1		
6	Coupling damaged cars.....		3	1		1	12		2
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		3				7		
8	Coupling with chain or other emergency appliance because of uneven track.....								1
9	Coupling or uncoupling safety chains.....		1		3		3		2
10	Fingers or hand caught between uncoupling lever and body of car.....		32		18		52		1
11	Uncoupling without using lever (unnecessary).....		4		2		9		
12	Uncoupling without using lever, uncoupling lever not in working order.....	1	12		11	1	17		
13	Foot caught in frog, switch, or guard rail.....	3	4	1	2	3	2		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	1	15		9	1	16		1
15	Opening knuckle when cars were near together, engine accidentally started.....		4		1		1		
16	Opening knuckle, part of defective coupler fell on foot.....		2		4		5		
17	Opening knuckle, lost footing.....	1	8	1	5	5	11		
18	Riding on car to uncouple, slipped off.....	2	6	1	1		4		1
19	Struck by object at side of track.....		5		1		5		
20	Caught by unexpected movement of car, due to slack running in.....	2	7		13	1	13		
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....		4	1	4	1	5	1	
22	Uncoupling moving cars and lost footing.....	2	4		3	2	18		
23	Parts hard to move, causing delay.....		3		3		9		
24	Went between cars unnecessarily and contrary to rule.....	2	10	3	5	2	18		2
25	Hand caught between projecting load and end of next car.....		2		1		2		
26	No witness (fatal injury).....					1			
27	Other causes.....		2		2		8		2
28	Unexplained.....		2		1		2	1	2
	Total.....	14	161	8	101	20	257	2	16

Details of injuries included in Table 3, subclass 27.

- J. 1. Hand caught while adjusting knuckle.
- J. 2. Stepped on nail.
- J. 3. Adjusting coupler and glove froze to knuckle.
- J. 4. Coat sleeve caught on knuckle.
- J. 5. Placed foot on rail; run over by car.
- F. 1. Struck by air hose.
- F. 2. Struck by air hose.
- F. 3. Burned by steam from steam hose.
- F. 4. Struck by air hose.
- F. 5. Struck by lump of coal which fell from tender
- M. 1. Stepped in hole.
- M. 2. Fell into hole left by section men.
- M. 3. Scalded by hot water from steam hose.
- M. 4. Adjusting coupler with piece of iron; as cars came together lost hold on iron and it flew up, striking him.

TABLE No. 3a.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Trainmen.	Trainmen in yards.	Yard trainmen.	Other employees.
Loss of feet.....	3	1	1	.....
Loss of legs.....	2	.....	.....	.....
Loss of arms.....	1	.....	5	.....
Loss of hands.....	1	2	4	.....
Loss of fingers.....	6	9	13	2
Loss of toes.....	1	1	.....	.....
Fractured skull.....	1	.....	.....	.....
Fractured leg.....	.....	.....	2	1
Fractured arm.....	3	.....	4	.....
Fractured collar bone or ribs.....	6	1	4	.....
Fractured other bones.....	5	4	5	.....
Contusion of head or body.....	17	8	42	3
Contusion or laceration of feet.....	11	10	22	1
Contusion or laceration of toes.....	3	2	5	.....
Contusion or laceration of legs.....	7	4	13	1
Contusion or laceration of arms.....	7	2	16	3
Contusion or laceration of hands.....	17	17	32	1
Contusion or laceration of fingers.....	52	28	67	3
Dislocation.....	1	1	3	.....
Internal injuries.....	5	3	3	.....
Sprains.....	8	5	15	.....
Miscellaneous.....	4	3	1	1
Total injuries.....	161	101	257	16
Killed.....	14	8	20	2
Total killed and injured.....	175	109	277	18

RECAPITULATION.

Total killed.....	44
Total injured.....	535
Total killed and injured.....	579

TABLE No. 4.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	1	9	.....	1	1	3	.....	2
	2 Ice or snow.....	1	18	.....	10	.....	17	.....	3
	3 Parting of train.....	2	16	.....	5	.....	7	.....	.....
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in sub-class 3.....	7	40	1	18	1	69	1	4
	5 While setting brakes.....	2	33	2	16	2	41	.....	2
	6 Fell from—								
	Coal car.....	2	6	.....	3	1	6	1	7
	Freight car other than box or coal car.....	3	29	.....	9	.....	8	.....	12
	Engine or tender.....	6	108	2	74	3	33	3	18
C7	9 Passenger car.....	1	11	1	6	.....	1	.....	1
	10 Engines, tenders, or cars (all kinds) not in motion.....	.....	73	1	36	.....	19	3	85
	11 Miscellaneous causes.....	3	124	1	44	2	223	1	78
	12 Not clearly explained.....	6	42	1	12	7	26	1	14
	13 Slipped getting on moving trains or cars.....	1	92	3	50	4	46	6	39
	14 Jumping off moving trains.....	2	156	3	82	2	98	1	33
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	.....	32	.....	8	.....	7	.....	1
	16 Fell from engines or cars by reason of defective hand-holds and sill steps.....	.....	29	.....	17	1	58	.....	3
	17 Getting on or off moving engine.....	4	146	.....	112	2	110	3	31
	18 Caught in frog, guard rail, or switch.....	1	3	.....	4	.....	1	.....	.....
Total.....		42	966	15	507	26	773	20	338

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor, and upon conviction thereof by a court of competent jurisdiction shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A), showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 25 shows 110 passengers killed in train accidents, three collisions and one derailment being responsible for 80 deaths in this class. The number of passengers killed from other causes (mostly their own negligence) also shows a large increase. One of the most serious collisions was due to the misreading of a dispatcher's order, and another to a mistake in sending or receiving the order.

Bulletin No. 26 shows a marked decrease in casualties as compared with preceding quarters, a large falling off in railroad traffic having taken place. The list of "prominent" train accidents includes only three cases which may be classed as notable.

Bulletin No. 27 shows further marked decreases in casualties, incident to the large falling off in railroad traffic. The number of passengers and employees killed in train accidents (125) is the smallest since the monthly records were established.

^a For notes on Bulletins 1-16, see Bulletin No. 17; for notes on Bulletins 17-24, see Bulletin No. 30.

The most fatal accident in this quarter was a collision at a street crossing, where 8 passengers in an electric car were killed.

Bulletin No. 28 recorded the smallest number of passengers killed in train accidents (13) ever reported in the quarterly records. The total of passengers and employees killed in train accidents (112) was 13 less than the previous low record (125, Bulletin 27). Of the 13 passengers killed in train accidents, 7 were victims of a butting collision on an electric railroad.

Bulletin No. 29 showed totals far smaller than the corresponding quarter one year previous, but the diminution in the number of casualties, which had continued during the year of depression, seemed to have been checked. The number of passengers killed in train accidents was 53, and there were 8 notable collisions.

Bulletin No. 30 recorded 34 passengers killed in train accidents (including 15 victims of a forest fire). One collision resulted in eight deaths of passengers and two derailments killed 16 employees.



ACCIDENT BULLETIN NO. 32

Collisions and Derailments of Trains
and
Casualties to Persons
on the Railroads of the United States

during the months of

April, May, and June, 1909

with

Tables for the year ending June 30, 1909

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



WASHINGTON
GOVERNMENT PRINTING OFFICE
1909

THE INTERSTATE COMMERCE COMMISSION.

MARTIN A. KNAPP, of New York.

JUDSON C. CLEMENTS, of Georgia.

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FRANCIS M. COCKRELL, of Missouri.

FRANKLIN K. LANE, of California.

EDGAR E. CLARK, of Iowa.

JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS

IN THE UNITED STATES DURING THE THREE MONTHS
ENDING JUNE 30, 1909.

The number of persons killed in train accidents during the months of April, May, and June, 1909, as shown in reports made by the railroad companies to the Interstate Commerce Commission under the "accident law" of March 3, 1901, was 99, and of injured 2,116. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off cars, etc., bring the total number of casualties up to 15,895 (588 killed and 15,307 injured). Accidents to employees resulting in slight injuries which do not prevent the injured employee from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident are not reported. These reports deal only with employees on duty and passengers. The casualties to passengers have been divided into three classes: Class *a* includes all ordinary passengers; class *b* includes passengers traveling on freight trains; and class *bb* includes persons who are customarily carried on trains under special arrangements, such as postal clerks, express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight. The reported casualties are classified in the following table:

TABLE No. 1.—*Casualties to persons, April, May, and June, 1909.*

	Passengers (<i>a</i> and <i>b</i>).		Persons carried un- der agree- ment or contract (<i>bb</i>).		Total (<i>a</i> , <i>b</i> , and <i>bb</i>).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....		327	1	28	1	355	14	185	3	87
Derailments.....	3	651	3	64	6	715	49	286	.....	29
Miscellaneous train accidents, including lo- comotive-boiler explosions.....		12	.....	4	.....	16	4	156	.....	45
Total train accidents.....	3	990	4	96	7	1,086	67	627	3	161
Coupling or uncoupling.....							10	167	6	110
While doing other work about trains or while attending switches.....							9	1,727	5	516
Coming in contact with overhead bridges, structures at side of track, etc.....		5	.....	1	.....	6	15	131	.....	60
Falling from cars or engines or while getting on or off.....	26	759	1	28	27	787	32	847	22	408
Other causes.....	8	793	2	75	10	868	26	123	10	84
Total (other than train accidents).....	34	1,557	3	104	37	1,661	92	2,995	43	1,177
Total (all classes).....	37	2,547	7	200	44	2,747	169	3,622	46	1,388

TABLE No. 1.—*Casualties to persons, April, May, and June, 1909—Continued.*

	Yard trainmen (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	3	51	3	55	23	378	24	733
Derailments.....	3	38	12	65	64	418	70	1,133
Miscellaneous train accidents, including locomotive-boiler explosions.....	1	18	.....	15	5	234	5	250
Total train accidents.....	7	107	15	135	92	1,030	99	2,116
Coupling or uncoupling.....	15	266	3	23	34	566	34	561
While doing other work about trains or while attending switches.....	5	584	12	506	31	3,333	31	3,333
Coming in contact with overhead bridges, structures at side of track, etc.....	3	84	.....	11	18	286	18	292
Falling from cars or engines or while getting on or off.....	20	649	26	328	100	2,232	127	3,019
Other causes.....	22	74	211	4,833	269	5,114	279	5,982
Total (other than train accidents).....	65	1,657	252	5,701	452	11,530	489	13,191
Total (all classes).....	72	1,764	267	5,836	544	12,560	568	15,307

In the total number of passengers and employees killed in train accidents (mainly collisions and derailments) the present record (99) is the lowest that the quarterly bulletins have ever shown. The previous low records were Bulletin 28, one year ago (112), and Bulletin 27 (125). Aside from this feature, the present bulletin shows no marked changes in totals of casualties. In Bulletin No. 31 the number of passengers killed in train accidents (37) was swelled by a single collision killing 20. The revival of business, tending to increase the liability to accident, continued during the quarter now under review; but, as in the quarter ending with June in previous years, conditions favorable to freedom from accident appear to have been more pronounced than at other times of the year. Other comparisons may be made from the table next following.

TABLE No. 1A.—*Comparisons of principal items with last bulletin and with one year back.*

	Bulletin 32.	Bulletin 31.	Bulletin 28.
1. Passengers killed in train accidents.....	7	37	13
2. Passengers killed, all causes.....	44	80	57
3. Employees killed in train accidents.....	92	140	99
4. Employees killed in coupling.....	34	44	31
5. Employees killed, all causes.....	544	583	534
6. Total passengers and employees killed, all causes.....	588	663	591

The total number of collisions and derailments in the quarter now under review was 2,100 (817 collisions and 1,283 derailments), of which 100 collisions and 172 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$1,703,642. Given more in detail, these facts appear as below (collisions and derailments which cause no death or per-

sonal injury and which cause not over \$150 damage to the property of the railroad are not reported):

TABLE No. 2—*Collisions and derailments.*

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	145	\$164,214	7	211
Collisions, butting.....	77	103,689	7	184
Collisions, train separating.....	71	22,858	1	29
Collisions, miscellaneous.....	524	220,073	9	309
Total.....	817	510,834	24	733
Derailments due to defects of roadway, etc.....	229	177,109	7	284
Derailments due to defects of equipment.....	543	470,993	5	160
Derailments due to negligence of trainmen, signalmen, etc....	64	36,633	3	59
Derailments due to unforeseen obstruction of track, etc.....	95	138,755	22	150
Derailments due to malicious obstruction of track, etc.....	9	14,096	1	20
Derailments due to miscellaneous causes.....	343	355,222	29	436
Total.....	1,283	1,192,808	67	1,109
Total collisions and derailments.....	2,100	1,703,642	91	1,842
Total for same quarter of 1908.....	2,130	1,617,398	104	2,008
1907.....	3,777	3,232,673	227	3,685

Following is the usual list of class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE No. 2A.—*Causes of 36 prominent train accidents.*

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and roadway.	Reference to record.	Cause.
1	R	F and F.....	1	1	\$2,000	3	Train approached yard not under control. One drover in caboose killed.
2	M	F and F.....	0	0	2,000	59	False clear signal at interlocking; due to error of repairman. (See note in text below.)
3	B	F and F.....	1	2	2,001	31	Collision of northbound freight and southbound empty engine; men in charge of empty engine misread order. Order read "four 4 k a. m." They read it four 4:15 a. m.
4	B	F and F.....	0	1	2,100	6	Signalman neglected to deliver order. (See note in text below.)
5	B	F and F.....	0	3	2,365	7	Conductor and engineman misread order. (See note in text below.)
6	M	P and F.....	0	0	2,450	33	Failure of automatic block signal. (See note in text below.)
7	B	P and F.....	0	6	3,250	55	Operator failed to deliver meeting order. (See note in text below.)
8	B	P and F.....	1	22	3,635	56	Schedule of superior train overlooked. (See note in text below.)
9	B	F and F.....	0	3	4,968	32	Mistake in dispatcher's order. (See note in text below.)
10	B	P and P.....	1	57	5,800	54	Operator made mistake in name of meeting point in writing dispatcher's order.
11	M	F and F.....	1	2	7,000	9	Failure to flag; train at rest; flagman killed in caboose.
12	B	P and P.....	1	13	7,000	30	Error of dispatcher. (See note in text below.)
13	M	F.....	0	0	10,850	57	Cars ran uncontrolled from siding to main line, 11 p. m.; due to rough handling of cars in yard.
14	R	F and F.....	0	1	13,500	2	Failure of air brakes; air leaked both in reservoir and in train line; no cause discovered; engineman had not watched gauges.
Total.....			6	111	68,919	.....

TABLE No. 2A.—Causes of 36 prominent train accidents—Continued.

DERAILMENTS.

No	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
1	D	P.	1	3	.....	19	Automobile, running on track, derailed by running over a dog; one guest killed.
2	D	F.	1	0	\$375	34	Undiscovered; one passenger jumped off caboose and was killed.
3	D	P.	0	4	2,100	36	Train carrying miners; engine running tender first; tender was first vehicle to run off the track; cause probably oscillation.
4	D	F.	0	0	3,300	25	Undiscovered; tender was first vehicle to run off the track.
5	D	P.	3	46	3,350	50	Engineman (who was killed) disregarded slow orders and flag.
6	D	P.	0	27	3,937	40	Steel girder bridge failed; undermined by flood.
7	D	P.	0	13	4,800	64	Soft track due to heavy rains; speed 45 miles an hour.
8	D	P.	0	42	5,500	35	Undiscovered; possibly oscillation of tender due to succession of low joints.
9	D	P.	2	1	6,000	80	Undiscovered.
10	D	F.	0	0	9,040	44	Breakage of driver brakehanger strap.
11	D	P.	0	13	9,542	21	Switch maliciously misplaced.
12	D	P.	0	19	9,800	53	Undiscovered; speed 40 miles an hour on good track; believed that tender was first vehicle to run off the track.
13	D	P.	2	23	10,000	22	Excessive speed on 10-degree curve; engineman killed.
14	D	P.	2	3	10,800	26	Undiscovered, but believed to be excessive speed over frogs and switches in yard; engineman, of twenty-one years' experience, was killed.
15	D	F.	0	0	11,000	15	Undiscovered; believed either excessive speed or broken brake-shoe.
16	D	F.	0	0	11,877	14	Excessive speed.
17	D	P.	1	13	12,000	37	Passenger train derailed by cars which had fallen out of freight train on adjacent track; freight had been derailed by broken wheel.
18	D	F.	0	8	13,000	75	Landslide. Train was moving 5 miles an hour on bank 50 feet high; bank with train slid into river.
19	D	P.	1	13	14,323	48	Washout. (See note in text below.)
20	D	F.	0	0	14,751	41	Broken axle.
21	D	F.	1	4	20,800	77	Runaway on 3.3 per cent grade; bad management of air brakes; engineman lacked experience on steep grades.
22	D	F.	0	0	31,700	66	Broken truck. Speed 40 miles an hour or higher; 12 cars and contents destroyed by fire.
Total.....			14	252	207,995	.....
Collision and derailment.....			20	343	276,914	.....

Collision No. 2, due to lack of care on the part of a signal repairman, occurred at 11 p. m. A contact spring having been broken in an electric interlocking machine, the day repairman was called out at this hour to correct the fault. In order to put in a new spring he had to loosen certain wires, and one of these wires accidentally came in contact with another in such a way as to complete the circuit which energized the motor to turn a switch; and this occurred just as a locomotive was approaching the switch. Being turned on to the wrong track, the locomotive collided with another which was passing at that moment.

Collision No. 4 was due to the neglect of a block signalman to display a stop signal. This signalman, at B, on receiving word from A that engine No. 5 was approaching called the signalman at C, and

having received proper authority from him displayed his signal in the positions to permit engine No. 5 to proceed to C. Immediately after doing this he received from the dispatcher an order to be delivered to engine No. 5. In receiving this order he gave to the dispatcher the regulation symbol indicating that he had displayed his signal in the stop position to stop engine No. 5; but in point of fact he had not displayed it, and did not. In a case of this kind he should also have displayed a red flag in addition to the fixed signal, but this also was neglected. The collision was due to the nondelivery of the order. This signalman was 34 years old and had had a number of years experience as a telegrapher, but he had been in the service of this company at this place only one day.

Collision No. 5 was a butting collision between freight trains, due to misreading of a dispatcher's order by the conductor and engineer of one of the trains. This order was to the effect that No. 52 was annulled from E to D; but in reading the order these men read "53" instead of "52." The figure "5" and the figure "2" were run together in such shape that it was possible to take the "2" for a "3." Aside from any question as to the legibility of the writing, the wording of the order was such that it should have put these men on their guard, for train No. 53 was running in the opposite direction from train No. 52. In other words, to say that No. 53 was annulled from E to D was a contradiction in terms, as No. 53 was running from D to E, and odd numbers were used exclusively for trains running in that direction. The number of the train was not written out in words. Neither of the men had read the order aloud to anyone, nor had either of them heard it read aloud.

Collision No. 6 was due to neglect in flagging, coincident with the failure of an automatic block-signal mechanism, which allowed the block signal to indicate clear notwithstanding that the section was occupied by cars.

The collision occurred at about 2 a. m. An eastbound freight train, entering a sidetrack about 1:10 a. m., to make way for a passenger train, which was westbound, was so long that when the engine stopped at the east end of the sidetrack, clear of the main track, the five rear cars of the freight train still fouled the main line. The rear brakeman signaled to the engineer to move farther ahead, and he did move a short distance; but still not enough to clear the main track at the rear. The rear brakeman then went back to signal any train that might be following. The conductor assumed that flagging against the train from the east would be attended to by the brakeman at the front end of the train, but this was not done. The automatic block signal, fixed near the east end of the siding, giving indications for westbound movements, indicated all clear, and the passenger train therefore proceeded past the signal at about 35 miles

an hour, and the engineman did not see the obstructing cars until he was within 400 feet of them.

The failure of the block signal to indicate stop was due to defective insulation on a binding post in the electric motor, the insulating material having become carbonized. With this insulation gone a short-circuit was caused which energized the motor, and thus the signal was held in the clear position notwithstanding that the track relay was open.

Collision No. 7, due to forgetfulness of a telegraph operator, occurred at 6 p. m. The operator had received an order for a certain train, and had set his signal in the proper position to stop the train. The train, however, did not arrive for about twenty minutes, and when it approached the operator changed the signal to indicate "proceed," in entire forgetfulness of the presence of the order. Of this forgetfulness the operator can give no explanation. In this case the office was provided with a "telltale device" intended to prevent just such forgetfulness, but this the operator did not use. The device consists of a metal disk, having the appearance of a flag, which, when there is an order on hand to be delivered, is fastened across the rope which holds the signal in the stop position. The disk is colored red and is intended as a reminder to the operator in case he shall attempt to pull the signal to the proceed position without thinking of the order. When there are no orders on hand the disk is turned to a different position, and shows white instead of red.

Collision No. 8, between an eastbound freight train and a westbound passenger train, was due to a mistake in reading the time table. The passenger train had just left the station at M, when it was met by the freight, which should have reached the station and cleared the main track before 8 p. m. The passenger train was about one and one-half minutes late, and the collision occurred at 8:03. The passenger train was moving slowly and the engineman succeeded in stopping his train, but the freight was running about 30 miles an hour, a curve in the line obscuring the view. The engineman of the freight testified that he read the time of the passenger train at that station as 8:10 instead of 8. The conductor makes the same statement. These men, however, did not compare their readings; one of them claimed to have examined the table two stations back and the other five stations back. The brakeman on the forward end of the freight claimed to have forgotten all about the passenger train; the brakeman at the rear end says that he heard the conductor say that the passenger train was due at M at 8:10.

Collision No. 9 was a butting collision of freight trains caused by an error in issuing an order from the dispatcher's office. At the time the dispatcher began the preparation of the order for the meeting of these trains, westbound extra No. 9 was proceeding from A to B,

with orders giving it the right of road to B and no farther. Eastbound extra No. 7 was at B without orders to proceed farther. The dispatcher in issuing his order intended to provide that the two trains should meet at B, but in some manner, which is reported as unexplainable, he named A instead of B. The order was sent only to B. It was repeated by the operator there, but even after the repetition the dispatcher did not discover his error. He had not written out the order before transmitting it. Extra No. 7, on receiving the order, started eastward and met extra No. 9 after proceeding a short distance. This dispatcher had been employed on this road about five years and on other roads eleven years. His record up to the time of this accident was absolutely clear.

Collision No. 12 was due to an error on the part of the train dispatcher in issuing meeting orders, and it occurred between the switches at the appointed meeting station. The operators who delivered the meeting orders to the trains were also held responsible, as they should have detected the dispatcher's error. The dispatcher sent an order to the eastbound train at B to run to T, the next telegraph station, "except hold main line and meet" the westbound at D, which is an intermediate nontelegraph station. He then sent an order to the westbound at T to run to B "except hold main line and meet" the eastbound at D. The dispatcher's error was in directing both trains to hold the main line, his intention being to require the westbound to enter the side track. The operators at B and T are required to control the movements of trains between these stations by the telegraph block system, and in cases like this, where trains are to meet at the intermediate nontelegraph station, to give suitable directions as to which train shall take the siding and which shall continue on the main line, doing this in accordance with the instructions in the dispatcher's orders, which go through the station operators' hands. It appears that both operators simply copied the dispatcher's wording without noting the inconsistency of the two orders. The accident happened at 5 a. m., and all three of these men had been on duty about five hours. The operator at T had been in the service on that division four years, and the operator at B seven years. The dispatcher had been in the service on that division about eight months and had had several years' experience as dispatcher, with good records, on other roads.

The collision occurred near the west switch. The westbound train had come to a stop before reaching the switch. The side track, however, is about 3,000 feet long, and, under the rules, the eastbound train was not required to stop until it reached the east switch. Approaching from the west, it passed over a 6-degree curve, around a bluff, and the engineman therefore had no opportunity to see the westbound

train until he was close upon it, and his speed was estimated at 35 miles an hour.

Derailment No. 19 occurred at 5:35 a. m. and was due to the weakening of the roadbed by high water, but there was no water visible in the vicinity at the time of the derailment. It appears that the fault was due to a sudden rain which occurred about 11 o'clock the previous evening. At that hour the track foreman in charge of this section, with his men, was absent on another section, where he had been called to help repair damage due to a washout. There had never been any trouble from high water at this point before, and the officers of the road therefore justified the action which was taken in sending the track repairers to another section, as was done in this case. The engineman of this train was killed, and therefore the exact fact as to how the roadbed appeared from the approaching train can not be ascertained.

A butting collision which occurred on June 19, on the Chicago, Lake Shore & South Bend Railway, causing the death of nine passengers and one employee is not included in the tables of this bulletin. This is an electric road, which failed to make a report of the accident as required by law.

TABLE NO. 3. *Details of Table No. 1—Causes of accidents to employees in coupling and uncoupling cars.*

Subclass.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		25		8		26		1
2	Adjusting coupler, cars accidentally started.....		4	1	4		11		1
3	Careless manipulation of uncoupling lever.....		2		1		6		
4	Cars not equipped with automatic coupler.....		3				1		1
5	Coupler broken, using link and pin or chain.....		1		1		1		1
6	Coupling damaged cars.....		4		1		4		
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		2		3	2	8		
8	Coupling with chain or other emergency appliance because of uneven track.....								
9	Coupling or uncoupling safety chains.....	1	4		4		7		3
10	Fingers or hand caught between uncoupling lever and body of car.....		33		17		65		1
11	Uncoupling without using lever (unnecessary).....	1	5		2		3		
12	Uncoupling without using lever, uncoupling lever not in working order.....		18		15	2	16		1
13	Foot caught in frog, switch, or guard rail.....		3		4		1		
14	Opening or closing knuckle when cars were near together miscalculated speed.....		9	1	9	1	22		1
15	Opening knuckle when cars were near together, engine accidentally started.....				3		4		
16	Opening knuckle, part of defective coupler fell on foot.....		3		3		7		
17	Opening knuckle, lost footing.....	2	7		3	3	8		2
18	Riding on car to uncouple, slipped off.....	1	2		4	1	6		1
19	Struck by object at side of track.....		1				8	1	1
20	Caught by unexpected movement of car, due to slack running in.....	2	9		7		15		3
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	1	4		1		3		1
22	Uncoupling moving cars and lost footing.....	2	3	1	2	4	9	1	1
23	Parts hard to move, causing delay.....		7		3		9		
24	Went between cars unnecessarily and contrary to rule.....		9	2	7	1	17	1	3
25	Hand caught between projecting load and end of next car.....		1		1		3		
26	No witness (fatal injury).....			1		1			
27	Other causes.....		7		5		4		1
28	Unexplained.....		1		2		2		
Total.....		10	167	6	110	15	266	3	23

Details of injuries included in Table 3, subclass 27.

- A-1. Scalded by steam from steam hose.
- A-2. Hand caught on nail.
- A-3. Foot caught between foot board and crossing plank
- A-4. Foot pinched under wheel.
- A-5. Struck by air hose.
- A-6. Sprained ankle.
- M-1. Struck by hose.
- M-2. Glove caught on coupler.
- M-3. Something flew off of coupler into eye.
- M-4. Caught foot on bolt.
- M-5. Struck by air hose.
- M-6. Struck by door which fell off car.
- J-1. Apron fell on arm.
- J-2. Scalded by steam from feed pipe.
- J-3. Metal splashed out of ladle.
- J-4. Scalded by water from overflow pipe.
- J-5. Struck by coal gate which fell off tank.

TABLE 3A.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Trainmen.	Trainmen in yards.	Yard trainmen.	Other employees.
Loss of feet.....	6	2	1	
Loss of legs.....	2	2	3	1
Loss of arms.....	2	3	2	
Loss of hands.....	1		1	
Loss of fingers.....	9	3	4	1
Loss of toes.....	1		3	
Fractured leg.....	1		4	
Fractured arm.....	2		2	1
Fractured collar bone or ribs.....	2	4	3	2
Fractured other bones.....	6	1	9	
Contusion of head or body.....	15	11	36	4
Contusion or laceration of feet.....	25	12	26	1
Contusion or laceration of toes.....	7	3	8	
Contusion or laceration of legs.....	3	3	9	
Contusion or laceration of arms.....	3	6	11	1
Contusion or laceration of hands.....	17	20	30	1
Contusion or laceration of fingers.....	53	32	90	5
Dislocation.....	1			
Internal injuries.....	1	2	1	1
Sprains.....	8	4	20	2
Miscellaneous.....	2	2	3	1
Total injuries.....	167	110	266	25
Killed.....	10	6	15	5
Total killed and injured.....	177	116	281	30

RECAPITULATION.

Total killed.....	34
Total injured.....	566
Total killed and injured.....	600

TABLE 4.—*Details of Table No. 1—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Subclass.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....		9		1	1	5		
	3 Parting of train.....	1	13		4		3		1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	3	41	2	31	1	53	3	4
	5 While setting brakes.....	2	32	2	16	3	52		3
	6 Fell from—								
	Coal car.....		2		3		8		1
	7 Freight car other than box or coal car.....	1	40		8		11		15
	8 Engine or tender.....	8	83	5	47	2	38	3	11
	9 Passenger car.....	1	6		1		2		2
	10 Engines, tenders, or cars (all kinds) not in motion.....		43		29		16	1	27
C7	11 Miscellaneous causes.....	1	133		38		173		13
	12 Not clearly explained.....	9	46	6	9	9	48	3	10
	13 Slipped getting on moving trains or cars.....	2	86	1	41	1	38	6	20
	14 Jumping off moving trains.....	1	132	4	75	2	69	5	45
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....		32		8		13		1
	16 Fell from engines or cars by reason of defective hand-holds and sill steps.....		24		14		42		12
	17 Getting on or off moving engine.....	3	125	2	77	1	75	5	30
	18 Caught in frog, guard rail, or switch.....				6		1		1
	Total.....	32	847	22	408	20	649	28	129

YEARLY TABLES.

This bulletin completes the publication of the accident records under the law of March 3, 1901, for eight years, and the table next following, Table A, gives the aggregates, for the year ending June 30, 1909, of the items which appear in Table No. 1 of the quarterly returns. The total number of casualties shown for the year in Table A is 66,711 (2,791 killed and 63,920 injured).

This table includes the following statistics which did not appear in the quarterly bulletins, the reports from which they are taken having been received after the bulletins were printed: Three passengers and 5 employees killed and 37 passengers and 61 employees injured.

The totals of these yearly tables are not comparable with those given in the commission's annual statistical reports, for the reason that the monthly reports deal only with accidents to passengers and to employees while on duty. The monthly reports take no account of accidents to "other persons." These appear in the annual reports, and include casualties at highway crossings, to trespassers, to persons walking along the track, accidents to employees in shops remote from the railroad, and all other accidents not occurring to passengers and to employees actually on duty.

The salient facts of the records of casualties for the twelve months are shown in Table B. As regards employees, a gratifying diminution is seen in every item. As to passengers, the number killed in train accidents has fallen off materially from the figure of the year preceding, which itself was much less than half of the total of the year before that. In injuries from causes other than train accidents—that is to say, from causes which in large measure are to be classed as the victim's own negligence—the change is the other way. For this no explanation is apparent. Possibly the railroads have adopted standards by which less serious injuries are included. As is well known, the term "injury," as used in statistics of this character, is elastic.

TABLE A.—Summary of casualties to persons, year ending June 30, 1909.

[NOTE.—The italic letters in the margin refer to the corresponding totals for the last preceding year, printed below.]

	Passengers (a and b).		Persons car- ried under contract (b b).		Total (a, b, and b b).		Trainmen. In yards.		Yard train- men (switch- ing crews).		Other em- ployees.		Total em- ployees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
a Collisions.....	72	2,716	22	317	94	3,033	39	467	20	284	44	345	248	2,302	342	5,395
b Derailments.....	30	2,450	7	267	37	2,717	11	128	14	125	31	199	227	1,448	264	4,165
c Miscellaneous train accidents, includ- ing locomotive boiler explosions.		96		19		115	4	177	2	94	3	69	45	1,067	45	1,182
d Total train accidents.....	102	5,262	29	603	131	5,865	54	772	36	503	78	613	520	4,817	651	10,742
e																
f																
g Coming in contact with overhead bridges, structures at side of track,																
h cars or engines or while	2	32		4	2	30	9	243	7	334	6	51	76	1,229	78	1,265
i or off.....	129	2,991	8	85	137	3,070	74	1,994	107	2,950	104	1,308	481	10,269	618	13,336
j	52	2,820	13	319	65	3,138	74	334	86	379	855	17,191	1,125	18,771	1,190	21,910
k Total (other than train acci- dents).....	183	5,843	21	408	204	6,251	216	5,430	277	7,359	1,006	20,891	1,936	46,927	2,140	53,178
l Total (all classes).....	285	11,105	50	1,011	335	12,116	270	6,202	313	7,862	1,084	21,504	2,450	51,804	2,791	63,920

Totals for preceding year.

	Passengers (a and b).		Persons car- ried under contract (b b).		Total (a, b, and b b).		Trainmen. In yards.		Yard train- men (switch- ing crews).		Other em- ployees.		Total em- ployees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
a Collisions.....	103	3,903	9	381	111	4,284	49	600	31	438	39	484	308	5,478	414	7,718
b Derailments.....	46	2,677	8	380	54	3,047	16	168	26	234	16	161	200	2,065	314	5,139
c Miscellaneous train accidents, includ- ing locomotive boiler explosions.		75	0	14	0	89	8	286	6	136	8	78	79	1,315	79	1,410
d Total train accidents.....	149	6,655	17	775	165	7,450	64	1,054	63	788	62	811	617	8,816	807	14,258
e																
f Coming in contact with overhead bridges, structures at side of track,																
g cars or engines or while																
h or off.....	3	39	1	8	4	37	12	276	13	345	14	51	110	1,363	114	1,590
i	164	3,454	6	67	169	3,601	98	2,356	152	3,576	157	1,396	603	11,796	827	14,236
j	69	2,440	9	237	78	2,677	103	438	100	443	1,184	15,814	1,493	17,328	1,571	20,003
k Total (other than train acci- dents).....	236	4,903	16	312	241	5,216	238	6,412	453	8,586	1,341	19,661	2,716	49,586	2,967	54,741
l Total (all classes).....	374	11,558	33	1,087	406	12,666	302	7,496	490	9,570	1,403	20,472	3,368	50,344	3,764	68,989

From Table B, next following, comparisons may be made for the last four years:

TABLE B.—*Casualties to passengers and employees, years ending June 30.*

	1909.		1908.		1907.		1906.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers:								
In train accidents.....	131	5,865	165	7,430	410	9,070	182	6,778
Other causes.....	204	6,251	241	5,215	237	4,527	236	4,407
Total.....	335	12,116	406	12,645	647	13,597	418	11,185
Employees:								
In train accidents.....	520	4,877	642	6,818	1,011	8,924	879	7,483
In coupling accidents.....	161	2,353	239	3,121	302	3,948	311	3,503
Overhead obstructions, etc.....	76	1,229	110	1,353	134	1,591	132	1,497
Falling from cars, etc.....	481	10,259	668	11,735	790	12,565	713	11,253
Other causes.....	1,218	33,086	1,699	33,317	2,116	35,661	1,772	31,788
Total.....	2,456	51,804	3,358	56,344	4,353	62,689	3,807	55,524
Total passengers and employees.....	2,791	63,920	3,764	68,989	5,000	76,286	4,225	66,709

Table C, on the next page, shows the totals of the two principal classes of train accidents for three years past. This table includes the following statistics which did not appear in the quarterly bulletins, the reports from which they are taken having been received after the bulletins were printed: Nine collisions; damage, \$23,462; killed, 0; injured, 23. Twenty-six derailments; damage, \$15,356; killed, 0; injured, 11.

The following tables are self-explanatory, being consolidations of the quarterly tables giving the same classes of facts:

TABLE D.—*Causes of accidents to employees in coupling and uncoupling cars, year ending June 30, 1909.*

Subclass.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		87		40		98		2
2	Adjusting coupler, cars accidentally started.....	2	20	3	11	5	40		4
3	Careless manipulation of uncoupling lever.....		15		9		28		2
4	Cars not equipped with automatic coupler.....		8		6		8		3
5	Coupler broken, using link and pin or chain.....	1	14		6	1	7		1
6	Coupling damaged cars.....	1	22	3	6	3	37	1	3
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		13		5	4	25		1
8	Coupling with chain or other emergency appliance because of uneven track.....								1
9	Coupling or uncoupling safety chains.....	1	5		10	1	22		8
10	Fingers or hand caught between uncoupling lever and body of car.....		138		86		227		10
11	Uncoupling without using lever (unnecessary).....	3	18		19		22		
12	Uncoupling without using lever, uncoupling lever not in working order.....	3	62	1	50	3	78		3
13	Foot caught in frog, switch, or guard rail.....	5	12	4	10	8	14		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	2	55	1	39	4	66		2
15	Opening knuckle when cars were near together, engine accidentally started.....	1	7		10	3	15	1	1
16	Opening knuckle, part of defective coupler fell on foot.....		14		14		24		1
17	Opening knuckle, lost footing.....	4	24	3	12	10	41		3
18	Riding on car to uncouple, slipped off.....	9	23	4	8	2	34		2
19	Struck by object at side of track.....		8		8		28	1	1
20	Caught by unexpected movement of car, due to slack running in.....	4	60		36	1	62		5
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	2	16	2	6	3	20	1	1
22	Uncoupling moving cars and lost footing.....	4	16	4	9	9	63	1	1
23	Parts hard to move, causing delay.....		21		10		28		
24	Went between cars unnecessarily and contrary to rule....	5	43	5	30	5	61	3	7
25	Hand caught between projecting load and end of next car.....		5		4		8		
26	No witness (fatal injury).....	2		6		5	1		
27	Other causes.....		25		14		21		4
28	Unexplained.....		4		5		8	1	3
	Total.....	49	735	36	463	67	1,066	9	69

TABLE D X.—*Nature of injuries to employees in coupling and uncoupling cars, year ending June 30, 1909.*

Injuries.	Train-men.	Train-men in yards.	Yard trainmen.	Other employees.
Loss of feet.....	15	4	12	.....
Loss of legs.....	8	2	6	1
Loss of arms.....	8	4	10	1
Loss of hands.....	3	5	8	.....
Loss of fingers.....	38	22	25	4
Loss of toes.....	8	5	5	1
Fractured skull.....	1	.....	.....	.....
Fractured leg.....	7	1	8	2
Fractured arm.....	13	6	11	3
Fractured collar bone or ribs.....	12	8	22	3
Fractured other bones.....	23	17	27	1
Contusion of head or body.....	66	42	154	12
Contusion or laceration of feet.....	76	49	102	3
Contusion or laceration of toes.....	25	13	29	1
Contusion or laceration of legs.....	24	16	59	4
Contusion or laceration of arms.....	28	19	55	4
Contusion or laceration of hands.....	84	85	139	9
Contusion or laceration of fingers.....	236	127	305	12
Dislocation.....	5	3	9	1
Internal injuries.....	14	9	14	2
Sprains.....	25	15	72	3
Miscellaneous.....	16	11	14	2
Total injuries.....	735	463	1,086	69
Killed.....	49	36	67	9
Total killed and injured.....	784	499	1,153	78

RECAPITULATION.

Total killed.....	161
Total injured.....	2,353
Total killed and injured.....	2,514

TABLE E.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines, year ending June 30, 1909.*

Subclass.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	1 Fell from roof of box car by reason of—								
	2 Defect in car.....	2	32	.....	11	2	17	.....	2
	3 Ice or snow.....	1	23	.....	14	.....	25	.....	2
	4 Parting of train.....	5	65	.....	24	2	25	.....	2
	5 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	15	202	7	96	5	245	8	33
	6 While setting brakes.....	10	140	4	76	11	206	.....	8
	7 Fell from—								
	8 Coal car.....	4	25	1	18	2	20	2	19
	9 Freight car other than box or coal car.....	10	155	3	49	.....	43	3	71
	10 Engine or tender.....	34	437	12	257	13	157	11	71
C7	11 Passenger car.....	4	38	1	10	1	7	.....	7
	12 Engines, tenders, or cars (all kinds) not in motion.....	.....	240	1	137	.....	79	7	283
	13 Miscellaneous causes.....	25	603	4	184	9	743	7	277
	14 Not clearly explained.....	50	172	11	52	33	156	8	67
	15 Slipped getting on moving trains or cars.....	10	384	7	199	8	229	28	197
	16 Jumping off moving trains.....	10	555	11	334	6	341	11	136
	17 Jumping from engines or cars anticipating collision, derailment, or other accident.....	.....	145	.....	36	.....	39	.....	9
	18 Fell from engines or cars by reason of defective hand-holds and sill steps.....	.....	142	.....	78	1	205	.....	11
	19 Getting on or off moving engine.....	15	578	12	404	13	408	19	129
	20 Caught in frog, guard rail, or switch.....	1	11	.....	15	1	5	.....	2
	Total.....	196	3,947	74	1,994	107	2,950	104	1,368

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor, and upon conviction thereof by a court of competent jurisdiction shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A), showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 25 shows 110 passengers killed in train accidents, three collisions and one derailment being responsible for 80 deaths in this class. The number of passengers killed from other causes (mostly their own negligence) also shows a large increase. One of the most serious collisions was due to the misreading of a dispatcher's order, and another to a mistake in sending or receiving the order.

Bulletin No. 26 shows a marked decrease in casualties as compared with preceding quarters, a large falling off in railroad traffic having taken place. The list of "prominent" train accidents includes only three cases which may be classed as notable.

^a For notes on Bulletins 1-16, see Bulletin No. 17; for notes on Bulletins 17-24, see Bulletin No. 30.

Bulletin No. 27 shows further marked decreases in casualties, incident to the large falling off in railroad traffic. The number of passengers and employees killed in train accidents (125) is the smallest since the monthly records were established. The most fatal accident in this quarter was a collision at a street crossing, where 8 passengers in an electric car were killed.

Bulletin No. 28 recorded the smallest number of passengers killed in train accidents (13) ever reported in the quarterly records. The total of passengers and employees killed in train accidents (112) was 13 less than the previous low record (125, Bulletin 27). Of the 13 passengers killed in train accidents, 7 were victims of a butting collision on an electric railroad.

Bulletin No. 29 showed totals far smaller than the corresponding quarter one year previous, but the diminution in the number of casualties, which had continued during the year of depression, seemed to have been checked. The number of passengers killed in train accidents was 53, and there were 8 notable collisions.

Bulletin No. 30 recorded 34 passengers killed in train accidents (including 15 victims of a forest fire). One collision resulted in 8 deaths of passengers and two derailments killed 16 employees.

Bulletin No. 31, in part, continues the favorable showing of the quarter one year previous (Bulletin 27), though it covers a period of considerable revival of business. One collision caused 20 deaths and 28 injuries.

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U.S. Interstate Commerce Commission
Washington, D. C.

OFFICE OF RECORDS
FEB 8 1910

Accident Bulletin

No. 33

Railroad Accidents in the United States

During July, August, and September
1909



Washington
Government Printing Office
1910

ACCIDENT BULLETIN NO. 33

Collisions and Derailments of Trains
and
Casualties to Persons
on the Railroads of the United States

during the months of
July, August, and September, 1909

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



WASHINGTON
GOVERNMENT PRINTING OFFICE
1910

THE INTERSTATE COMMERCE COMMISSION.

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EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS

IN THE UNITED STATES DURING THE THREE MONTHS
ENDING SEPTEMBER 30, 1909.

The number of persons killed in train accidents during the months of July, August, and September, 1909, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 193, and of injured, 3,752. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 20,093 (852 killed and 19,241 injured). Accidents to employees resulting in slight injuries, which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident, are not reported. These reports deal only with employees on duty and passengers. The casualties to passengers have been divided into three classes. Class *a* includes all ordinary passengers. Class *b* includes passengers traveling on freight trains. Class *bb* includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, livestock tenders, and men in charge of freight. The reported casualties are classified in the following table:

TABLE No. 1.—*Casualties to persons—July, August, and September, 1909.*

Causes.	Passen- gers (a and b).		Persons carried under agree- ment or con- tract (bb).		Total (a, b, and bb).		Train- men.		Train- men in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	34	1,288	5	105	39	1,393	52	308	8	126
Derailments.....	8	833	9	61	17	894	40	316	....	35
Miscellaneous train accidents, including loco- motive boiler explosions.....	....	37	....	1	....	38	9	264	1	64
Total train accidents.....	42	2,158	14	167	56	2,325	101	888	9	225
Coupling or uncoupling.....	....	....	....	....	....	....	10	209	9	130
While doing other work about trains or while at- tending switches.....	....	....	....	....	....	....	7	2,015	4	691
Coming in contact with overhead bridges, struc- tures at side of track, etc.....	1	14	....	2	1	16	18	142	5	60
Falling from cars or engines or while getting on or off.....	30	946	2	25	32	971	51	1,107	16	555
Other causes.....	14	1,037	1	64	15	1,101	37	163	22	94
Total (other than train accidents).....	45	1,997	3	91	48	2,088	123	3,636	56	1,530
Total, all classes.....	87	4,155	17	258	104	4,413	224	4,524	65	1,755

TABLE NO. 1.—*Casualties to persons—July, August, and September, 1909—Continued.*

Causes.	Yard trainmen (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	5	63	5	95	70	592	109	1,965
Derailments.....	4	39	10	72	54	462	71	1,356
Miscellaneous train accidents, including locomotive boiler explosions.....	1	27	2	18	13	373	13	411
Total train accidents.....	10	129	17	185	137	1,427	193	3,752
Coupling or uncoupling.....	18	277	1	17	38	633	38	633
While doing other work about trains or while attending switches.....	10	685	10	569	31	3,960	31	3,960
Coming in contact with overhead bridges, structures at side of track, etc.....	3	69	2	20	28	291	29	307
Falling from cars or engines or while getting on or off.....	27	765	42	431	136	2,858	168	3,829
Other causes.....	25	79	294	5,323	378	5,659	393	6,760
Total (other than train accidents).....	83	1,875	349	6,360	611	13,401	659	15,489
Total all classes.....	93	2,004	366	6,545	748	14,828	852	19,241

The only favorable indication that can be discerned in the foregoing statistics is that afforded by the fact that the totals of employees killed in train accidents and in coupling cars do not show such decided increases as do those of employees killed from other causes. These last-named items might be expected to increase, because of the general increase of traffic, and on this supposition the absence of increase in the others indicates improved conditions. Five accidents—collisions 14, 16, 24, and 1, and derailment No. 19—caused 47 deaths. The causes of these and of others in which the circumstances were notable or unusual are given in connection with Table No. 2A.

TABLE NO. 1A.—*Comparisons of principal items with last bulletin and with one year back.*

	Bulletin 33.	Bulletin 32.	Bulletin 29.
1. Passengers killed in train accidents.....	56	7	53
2. Passengers killed, all causes.....	104	44	110
3. Employees killed in train accidents.....	137	92	138
4. Employees killed in coupling.....	38	34	39
5. Employees killed, all causes.....	748	544	624
6. Total passengers and employees killed, all causes.....	852	588	734

The total number of collisions and derailments in the quarter now under review was 2,751 (1,288 collisions and 1,463 derailments), of which 229 collisions and 192 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,316,014. Given more in detail, these facts appear as below (collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported):

TABLE No. 2.—Collisions and derailments.

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	261	\$273, 195	17	516
Collisions, butting.....	171	328, 155	63	1, 024
Collisions, train separating.....	110	61, 924	1	39
Collisions, miscellaneous.....	746	382, 631	28	406
Total.....	1, 288	1, 045, 905	109	1, 985
Derailments due to defect of roadway, etc.....	268	211, 301	9	281
Derailments due to defects of equipment.....	671	544, 745	9	149
Derailments due to negligence of trainmen, signalmen, etc.....	84	37, 996	3	75
Derailments due to unforeseen obstruction of track, etc.....	83	122, 800	17	351
Derailments due to malicious obstruction of track, etc.....	14	36, 149	3	68
Derailments due to miscellaneous causes.....	343	317, 118	30	432
Total.....	1, 463	1, 270, 109	71	1, 356
Total collisions and derailments.....	2, 751	2, 316, 014	180	3, 341
Total for same quarter of 1908.....	2, 567	1, 950, 408	176	2, 729
1907.....	4, 279	3, 605, 696	309	4, 534

Following is the usual list of class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE No. 2A.—Causes of 43 prominent train accidents.

[NOTE.— R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to en- gines, cars, and road- way.	Reference to record.	Cause.
1	R	P and F	6	3	\$600	76a	Failure to flag. (See note in text below.)
2	B	P and P	1	9	1,820	38	Southbound train ran over misplaced switch and collided with northbound standing on sidetrack. Porter of northbound had set switch straight, and afterwards went back and set it for siding; can not explain. Engineman of standing train was killed. Time, 2 p. m.
3	B	F and F	0	2	3,000	69	Operator overlooked order; block signal not properly managed. (See note in text below.)
4	M	P and F	0	0	3,378	74	Passenger train ran into side of freight backing into sidetrack. Passenger had been flagged, but seeing automatic block signal clear, engineman resumed speed, though flagman had not been called in. Automatic signal had been cleared by foreign electric current in rails. It remained clear only a few seconds and, according to the report, had turned again to the stop position before the engine- man passed it.
5	B	P and P	0	52	3,500	67	Collision of northbound extra electric car with southbound regular. Conductor of extra, while his car was on sidetrack, tried (by hand motion only) to instruct conductor on regular car passing him, bound in same direction, to hold southbound at next meeting point; but his message was not understood. Communicating orally in this way was contrary to rules.
6	B	F and F	4	4	4,500	63	Dispatcher gave conflicting meeting orders to extra train running south and work train running north. Dispatcher of two years' experience, but in service at this place only two months.
7	B	F and F	1	2	4,520	73	Mistake in copying dispatcher's order. (See note in text below.)

TABLE NO. 2A.—*Causes of 43 prominent train accidents—Continued.*

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
8	B	P and F.....	2	43	\$4,740	45	Extra engine, eastbound, encroached on time of regular passenger train, No. 51, westbound. Engineman of extra thought the day was Sunday, on which day No. 51 does not run. Conductor was equally negligent, but offered no excuse. Brakeman had neglected to examine time table. One passenger killed.
9	R	P and P.....	2	11	6,000	66	Passenger train (4 a. m.) delayed seriously, but flagman did not go back to protect from train following; neither did he use fuses; time interval at last preceding station, five minutes.
10	B	F and F.....	1	3	6,355	72	Dispatcher, in issuing an order to supersede a previous order, sent it to only one of the two trains that had had the first order.
11	B	F and F.....	0	4	7,094	37	Conductor and engineman of northbound train forgot meeting order.
12	B	P and F.....	3	17	8,600	7	Conductor and engineman of westbound extra train neglected to identify themselves and give proper explanation to eastbound. (See note in text below.)
13	M	P and F.....	0	0	10,000	70	Freight on siding on 3 per cent grade accidentally started and ran against passing passenger train. Engineman moved throttle (same not being latched) when he pulled whistle.
14	B	P and P.....	16	167	12,300	4	Westbound extra encroached on time of eastbound regular train. (See note in text below.)
15	R	P and P.....	0	43	12,775	35	Failure of block signalman to put signal in stop position after passage of passenger train, combined with inefficient flagging. (See note in text below.)
16	B	P and P.....	9	40	14,101	36	Disregard of meeting order. (See note in text below.)
17	R	F and F.....	0	0	14,200	87	Misunderstanding of orders.
18	B	F and F.....	0	4	14,485	76	Operator failed to deliver meeting order. (See note in text below.)
19	B	P and F.....	2	7	15,000	6	Agent failed to deliver order; fireman misunderstood order as to movement of train, given by word of mouth. (See note in text below.)
20	B	P and P.....	3	6	19,000	3	Southbound ran over misplaced switch and collided with northbound standing on side track. The northbound usually held the main line at this point, and the brakeman (experienced and of good character), who went forward to the switch, set it for the side track; can not explain.
21	B	P and P.....	0	59	19,101	64	Westbound, three hours late, encroached on time of eastbound superior train. Conductor and engineman of westbound overlooked the fact that the eastbound was superior; they also had neglected to stop at B to make entry on register. Eastbound train would have left main line at B.
22	M	F and F.....	0	0	22,000	32	Train broke in two and rear portion, left on grade without hand brakes being set, ran back and collided with another train.
23	M	F and F.....	4	1	29,065	43	Runaway on steep grade. Fifteen cars had been taken on at a way station and the angle-cock of the air-brake pipe had not been opened at the rear of the 15 cars. Men in charge of train failed to test brakes as required by rule.
24	B	P and F.....	8	23	29,521	75	Conductor, engineman, and fireman of passenger train forgot meeting order. Engineman was killed. Conductor and fireman can give no explanation. Order had been in their hands 17 minutes.
Total, collisions.....			62	500	265,655		

TABLE NO. 2A.—Causes of 43 prominent train accidents—Continued.

DERAILMENTS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to en- gines, cars, and road- way.	Reference to record.	Cause.
1	D	P.....	2	7	.....	11	Train consisted of a single electric car, which became uncontrollable on steep grade because of slippery track and unexplained failure of air brake. One passenger killed.
2	D	F.....	1	3	\$35	25	Cars of circus train not fit to run over sharp curve; speed very low.
3	D	F.....	2	2	170	20	Car of eastbound freight knocked off track by car in westbound freight, which had been derailed by the pulling out of a drawbar, following the sudden application of the air brakes because of the bursting of a hose. Two men riding in car (in charge of horses) killed.
4	D	P.....	0	96	300	53	Car in excursion train, full of passengers, too heavy on inside of 16-degree curve; sill of car rested on wheels, preventing truck from curving freely. Speed 6 miles an hour.
5	D	P.....	0	3	2,454	55	High speed on 7½-degree curve; superelevation of outer rail 8 inches. Speed 55 to 60 miles an hour; tender was first vehicle to run off the track. Tender had side bearings for the rear truck but not for the front. It ran 4,700 feet off the rails before the fact was noticed. Track in good condition.
6	D	P.....	1	61	5,000	22	Washout; 3 p. m. Train moving very slowly. Track foreman held at fault for not stopping train.
7	D	P.....	1	14	5,138	19	Unexplained. Derailment occurred at switch; tender first vehicle to run off the track. One passenger killed.
8	D	P.....	0	14	5,845	23	Washout. Engineman and also assistant roadmaster, riding on engine, held at fault for lack of caution in running. Derailment occurred at midnight; section foreman not on duty.
9	D	F.....	0	0	10,600	30	Unexplained. Speed 25 miles an hour on 6-degree curve. Bridge damaged.
10	D	F.....	0	0	11,000	27	Excessive speed.
11	D	F.....	0	0	12,250	51	Excessive speed.
12	D	F.....	0	5	12,450	26	Runaway on steep grade; 1:40 a. m. Engineman, nine months in service, started train before train pipe of air-brake system was fully charged.
13	D	P.....	0	13	12,500	12	Broken rail.
14	D	F.....	0	0	13,000	24	Maliciously misplaced switch. Wreck partly destroyed by a fire which started in a car containing matches.
15	D	F.....	1	1	13,465	21	Runaway on steep grade. (See note in text below.)
16	D	P.....	0	3	16,250	50	Bridge weakened by fire; situated on curve where view was very short.
17	D	P.....	3	48	16,375	82	Rail joint maliciously removed and rail pulled out of place.
18	D	F.....	0	0	24,050	15	Loose wheel. Derailed truck knocked down a bridge.
19	D	P.....	8	57	26,730	31	Embankment undermined by flood. Track inspected and in good order at 6 p. m. Derailment occurred at 10 p. m. Engineman and fireman killed; six passengers killed.
Total derailments.....			19	327	187,612		
Total collisions and derailments.....			81	827	453,267		

Collision No. 14, killing 16 passengers and injuring 165 passengers and 2 trainmen, was between a westbound special passenger train and an eastbound regular passenger train, the special having run only about 1½ miles from its initial point. Both trains were heavily loaded. The special had no right to the road as against the regular. It had received an order from the dispatcher to meet an eastbound special at a point 5 miles farther on, and it appears that the motor-

man, not having read the order with sufficient care, had in his mind the impression that the eastbound train specified in the order was the regular (against which, in fact, he had no rights). When the special train was ready to start, the eastbound regular train, which was already due, had not arrived, and the conductor told the motorman to move forward a short distance (within the yard limits) to the switch at which the incoming regular train would clear the main line, the conductor's intention being to wait there until the eastbound train arrived. Having given this information, and the train having started, the conductor at once went into the first car of the train and began taking up tickets; and while thus engaged, the train went on and passed the switch (at which it should have stopped) without his knowledge. The westbound train was running 20 or 25 miles an hour a moment preceding the collision, and for this speed the motorman is held blameworthy, as he might have seen the eastbound train in time to apply the brakes some 500 feet farther east. The eastbound train had been stopped or nearly stopped before the collision. Both trains having electric motor cars in front, with no separate locomotive, the brunt of the collision was borne by cars occupied by passengers.

Collision No. 16, killing 8 passengers and 1 employee, was due to carelessness on the part of the men in charge of the northbound train. This train, drawn by two engines, was ordered to meet the first section of the southbound at B and the second section at C. On arriving at B the first section of the southbound was found on the siding and passed. On arriving at C no stop was made and the second section of the southbound was met 300 feet beyond the farther switch. The men in charge of the northbound train—the conductor and two enginemen—offer the explanation that an engine standing on the side track at C was mistaken by them for the second section (which they were to meet), but this "explanation" still leaves these men chargeable with gross negligence as the engine standing on the sidetrack had white flags displayed (showing that it was not a regular train) and it was of a different number from that of the engine of the regular train which was to be met and the number of which was named in the meeting order. Both trains were running at full speed when they met.

Collision No. 1, in which six drovers, riding in the caboose of a freight train, were killed, occurred about midnight on a line which is used by the trains of several companies, and on which it seems the trains are run under somewhat peculiar rules. The freight train, belonging to road A, and consisting of cars of live stock, was running over the track of line B, its trip over these tracks being for a distance of about 4 miles. It is the duty of the men in charge of

all such freight trains to be constantly on the alert to protect their train from any train following; but it does not appear that they are required to keep themselves posted as to the times when following passenger trains are due. On the other hand, the rules limit the speed of passenger trains to 25 miles an hour. The passenger train belonged to road B. It had left the last preceding station about seven minutes behind the freight. According to the testimony before a coroner's jury (as reported by the railroad company) the stock train was running at from 1 to 6 miles an hour at the time of the collision and the passenger train at from 12 to 40 miles an hour. From this last finding it would appear that the jury was unable to reach a definite conclusion, from the testimony, as to the speed of the passenger train. The only witness who thought that it was running at anything like 40 miles an hour was one of the drovers in the caboose of the freight train. The report of the railroad company indicates that the flagman of the freight had neither made any effort to flag the passenger train nor thrown off any fusees; and that the engineer of the passenger train was running his train at a moderate speed, from which he could have stopped within 500 feet if he had been flagged; and that he was keeping a good lookout. He had shut off steam preparatory to reducing speed to 12 miles an hour a little farther on. The conductor and the flagman of the freight appear not to have been well acquainted with the road. They declare that their train was moving at 10 or 12 miles an hour, but the coroner's jury evidently discredited this statement. The engineman of the passenger train and the conductor of the freight were men of long experience; the flagman of the freight, 23 years old, had been in the service about one year.

Collision No. 3 occurred on a double-track road about 3 a. m., and was due to errors of block-signal operators in arranging for the sending of a train east on the westbound track. Extra train 6 was to run eastward from B to C and an order was sent to C which required the telegrapher at C to hold all westbound trains until the arrival of extra train 6 at C. Just as this train left B, the signalman at C allowed a westbound train to pass toward B. The signalman at B accepted this westbound train for the reason, as he said, that he thought it was on the eastbound track. The superintendent, however, holds that there is no reason to justify such an impression on his part. The operator at B was 21 years old and had been in the service about one month. The operator at C was 22 years old and had been in the service about six months.

Collision No. 7 was between southbound and northbound regular freight trains. An order was delivered that the northbound would

wait at F until 12:20 a. m. for the southbound; then another order was sent to the effect that it would wait at B until 12:40 a. m for the southbound; then a third order was sent saying that it would wait at F until 12:50 a. m for the southbound, and "orders 140 and 135 are annulled." In delivering this order the operator wrote "40" in place of "140," though the superintendent is satisfied that in repeating it to the dispatcher he repeated correctly; and the order was delivered so soon after it was received that it is not likely that the operator had time to rewrite it. The conclusion seems to be that in repeating the order he discovered his error and intended to add the figure "1" before delivering it; but he did not do so. By this mistake order No. 140 was left in force, and this caused the collision, as the other train affected by this annulled order had received a correct copy of the annulling telegram and was thus relieved from complying with that order. The conductor and the engineman of the southbound are held at fault for accepting an order annulling another order which they had not received. It should have occurred to them that something was wrong. The operator who made this mistake had had four months' experience. The conductor and engineman who accepted the suspicious order had had several years' experience.

Collision No. 12, occurring on a single-track line about 3 a. m., was due to the neglect of trainmen to exactly and properly identify each other's trains at a meeting point. Several extra passenger trains were to be run west from G. Some of these were run as sections of a regular train, and then, when the schedule of this train was 12 hours old, four additional passenger trains were run as specials. After the dispatcher had issued his orders, making a number of meeting points for these four specials, it was decided to run a fifth. The fifth was run from one station to another ahead of the third and on the rights of the third. This was an irregular proceeding made apparently by the conductor of the train on his own authority, but in accordance with rule 94 of the standard code. This fifth train, now become the third, may be designated as No. 81. (A special passenger train is designated by the number of its engine.) It was running on the rights of No. 82, and the men in charge of it were taking care that no eastbound train should encroach on the rights of No. 82. On meeting an eastbound extra freight the engineman of No. 81 spoke to the engineman of the freight, describing the situation. The conductor of No. 81 was nearby, but did not participate in this conversation and did not know exactly what was said. The conversation between the enginemen should have been participated in and confirmed also by the conductor of the eastbound freight; but he, with a brakeman, was on the rear of his train,

and although they noticed, on passing the westbound, that the engine was not the correct number that they expected, they assumed that their engineman had received suitable assurances from the man on the westbound and they took no action to prevent their engineman from proceeding toward the next station; and the collision occurred in three or four minutes afterwards. The primary trouble appears to be that the engineman of the eastbound had fixed in his mind the four westbound specials which were to be met, and did not realize that he had been informed that there were five trains.

Collision No. 15 was due to the neglect of a block signalman and of a flagman. An eastbound freight train was stalled at S, and a passenger train, following, was coupled to the freight in order to assist it up a grade. While the two trains were being coupled the flagman of the passenger went back with a red light. The coupling having been completed, the engineman of the passenger train sounded two blasts of the whistle, for the release of the brakes, and then repeated the signal. The flagman, wrongfully assuming that the sounds of the whistle authorized him to return to his train, did so return; but the combined train was slow in moving and the flagman went back a second time. Before he had gone far, however, he met a following passenger train, running at 40 miles an hour, and the engineman of this train was unable to stop it before striking the one ahead of it.

The rear of the stalled passenger train was about 1,100 feet ahead of a semaphore signal, which should have been set to stop the second passenger train, but which was left in the clear position. For this the signalman is held grossly negligent. From the next station in the rear, up to this signal, the manual block system was in effect, but that section of the line ahead of the signal and occupied by the stalled trains, being in the yard, was not worked under the block system. The operator who had left the signal wrongfully in the clear position had kept his distant signal set against the approaching train, but as the engineman could plainly see the home signal, he of course did not slacken speed at the distant. The signalman saw the second passenger train in season to have set the home signal against it, but he became confused and did not think to take such action. The engineman of the second passenger train is held blameworthy for not being properly alert approaching the station. The testimony shows that he did not shut off steam until nearly or quite the moment at which he struck the train ahead.

Collision No. 18, between westbound freight train No. 33 and eastbound freight train No. 34, occurred one-half mile west of the station where the trains should have met, and was due to the failure of an operator to deliver the meeting order to the westbound train.

Having a number of orders to deliver to that conductor, he delivered all but one of them. The dispatcher was also held blameworthy because, in receiving the acknowledgement from the station operator of a number of orders for train No. 33, he failed to note that the particular order in question was not acknowledged. This dispatcher had had eighteen years' experience—ten as an operator and eight as a dispatcher. The station operator is 22 years old and has had eight years' experience, during the last four of which he has handled train orders. This collision occurred at 2 o'clock a. m. and the operator had been on duty about two hours. He declared that he was not sleepy.

Collision No. 19 was due to the failure of a station agent to deliver a meeting order, and to a misunderstanding in connection with an oral order given by the conductor to the fireman. Passenger train No. 3, northbound, and freight train No. 6, southbound, were to meet at S. An order had been issued to this effect, to be delivered to the passenger train at D, a station 7 miles short of S; but this order the agent at that point failed to deliver. The collision, however, is not to be charged wholly to this failure, because a part of the freight train had arrived at S before the passenger train reached that point. The freight train had been stalled about 2 miles before reaching S, and a part of its cars had been left standing on the main track, while the engine and the front part of the train went on to S. As this front portion was obliged to pass beyond the station at S, a flagman was sent forward to stop the passenger train, which he did. The passenger train after being flagged moved forward to the station. When ready to start its conductor spoke to the fireman, only about 30 feet away from him, giving instruction that the train should be moved forward and then set back on to the siding to wait for the freight, the engine of which had gone back to haul in the rear portion of its train. The freight flagman, standing with the passenger conductor, also made a hand motion to the fireman, indicating the same thing. The fireman (who was subsequently killed in the collision) nodded his head and the train was started. When its rear end passed the switch, the conductor dropped off to turn the switch and then was astonished to find that the train, instead of stopping, kept on; and it soon collided with the freight train. The passenger engineman, as well as the fireman, was killed. Both engineman and fireman were experienced men and had worked together four years. Both men being killed, there is no explanation of how they came to misunderstand the situation and the orders given. The collision occurred at 3:25 p. m.

The agent at D, who failed to deliver the order to the passenger train, had resigned his position and was to leave the service the next day. He took this message and then seems to have depended on

his prospective successor to deliver it, but without telling him to do so; and when the train came was out on the platform talking with an acquaintance, entirely forgetful of the order. There was no train-order signal at the station as, until a short time before that, the universal practice was to send all train orders by telephone direct to conductors, and always simultaneously to both of the conductors for which a meeting order contained instructions. The flagman who flagged the passenger train at S did not explain to the engineman the reason why the flag had been displayed.

Derailment No. 15 was due to mismanagement of the air brakes on a train consisting of 2 engines and 33 cars. The air-brake pipes were properly connected throughout the train. Parts of two trestle bridges were knocked down by the derailed cars, a car in the middle of the train being derailed first, at a curve, causing the derailment of the cars behind it, which were piled up in the ruins of a bridge which was encountered at that point and which was wrecked; and the forward part of the train ran some distance farther, when that also was derailed at a bridge, with the exception of the leading engine, its tender, and the second engine, the tender of the second engine going off the track. Some little time after passing over a summit, the engineman of the leading engine, attempting to apply the brakes, discovered that there was no air pressure available. He sounded his whistle for the application of the hand brakes, and then went back to the second engine, but found that it was impossible to check the speed of the train there. By this time the train was running so fast that it was impossible for the brakemen to get from one car to another. It is the conclusion of the officers of the company that at the time the leading engine was attached to the train, for the purpose of assisting it up a grade, its engineman neglected to "cut in" his brake valve, so that for some distance the brake valves of both engines were cut out. During this time the air leaked from the train line, but so very slowly that the brakes were not applied by the reduction of pressure. The engineman of the leading engine was blameworthy in not noticing the condition of the air pressure, and also for not making the running test required by the instructions. The engineman of the second engine is at fault for not having seen that the leading engineman made the test as required. The conductor, who was in the caboose, neglected to notice the air gauge. When the whistle was sounded for the application of the brakes, the conductor suddenly discovered that there was no pressure in the train line.

TABLE NO. 3.—Details of Table No. 1.—Causes of accidents to employees in coupling and uncoupling cars.

Subclass.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		25		13		24		
2	Adjusting coupler, cars accidentally started.....				2		7		
3	Careless manipulation of uncoupling lever.....		4		2		11		
4	Cars not equipped with automatic coupler.....	2	2				1		3
5	Coupler broken, using link and pin or chain.....				1		2		1
6	Coupling damaged cars.....		5	1	4	3	11	1	1
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		5				7		1
8	Coupling with chain or other emergency appliance because of uneven track.....		1						
9	Coupling or uncoupling safety chains.....		4		2	1	6		1
10	Fingers or hand caught between uncoupling lever and body of car.....		43		26		54		3
11	Uncoupling without using lever (unnecessary).....	1	6		12		15		
12	Uncoupling without using lever, uncoupling lever not in working order.....		21	1	13	1	20		
13	Foot caught in frog, switch, or guard rail.....		2		3	2	6		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	1	11		5	2	20		1
15	Opening knuckle when cars were near together, engine accidentally started.....		3		4		3		1
16	Opening knuckle, part of defective coupler fell on foot.....		2				7		1
17	Opening knuckle, lost footing.....	1	6		6		9		
18	Riding on car to uncouple, slipped off.....		2		5	1	1		
19	Struck by object at side of track.....		6	1	3	1	4		1
20	Caught by unexpected movement of car, due to slack running in.....	2	22	2	14	1	18		1
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....		2	1	3		4		
22	Uncoupling moving cars and lost footing.....	2	7	2		3	14		
23	Parts hard to move, causing delay.....	1	5		2		6		
24	Went between cars unnecessarily and contrary to rule.....		12	1	4		9		
25	Hand caught between projecting load and end of next car.....		3		1		2		
26	No witness (fatal injury).....					2			
27	Other causes.....		8		2		12		
28	Unexplained.....		2		3	1	4		2
	Total.....	10	209	9	130	18	277	1	17

Details of injuries included in Table 3, subclass 27.

- J. 1. Struck by piece of coke which fell from car.
- J. 2. Foot caught under wheel.
- J. 3. Stumbled over jack.
- J. 4. Struck by car door which fell to the ground.
- J. 5. Stepped on nail.
- J. 6. Struck by coal gate.
- J. 7. Struck by chock which flew up.
- A. 1. Stepped on stone.
- A. 2. Lump of coal fell off car and struck foot.
- A. 3. Glove caught on nail.
- A. 4. Hook on safety chain caught in pocket.
- A. 5. Struck arm against nail.
- A. 6. Board fell from roof of car, striking shoulder.
- A. 7. Struck by corner of car.
- A. 8. Lever flew up, striking hand.
- S. 1. Caught finger in knuckle.
- S. 2. Piece of ice fell from car.
- S. 3. Caught foot under wheel.
- S. 4. Caught finger in knuckle.
- S. 5. Brake shaft fell on foot.
- S. 6. Brake flew around and strained hand.
- S. 7. Tank shifted, catching hand.

TABLE 3a.—Nature of injuries to employees in coupling and uncoupling cars.

Injuries.	Trainmen.	Trainmen in yards.	Yard trainmen.	Other em- ployees.
Loss of feet.....	5	1	3	1
Loss of legs.....	3	2	1	
Loss of arms.....	2		4	
Loss of hands.....	1			
Loss of fingers.....	6	4	8	
Loss of toes.....	2	1		
Fractured leg.....	3	1	1	
Fractured arm.....	3	1	4	
Fractured collar bone or ribs.....	7	2	4	
Fractured other bones.....	5	1	6	
Contusion of head or body.....	19	11	39	3
Contusion or laceration of feet.....	24	9	24	1
Contusion or laceration of toes.....	3	6	11	1
Contusion or laceration of legs.....	8	5	17	
Contusion or laceration of arms.....	15	7	13	1
Contusion or laceration of hands.....	24	23	36	4
Contusion or laceration of fingers.....	66	41	86	5
Dislocation.....	1	2		
Internal injuries.....	2	7	2	1
Sprains.....	6	5	15	
Miscellaneous.....	4	1	3	
Total injuries.....	209	130	277	17
Killed.....	10	9	18	1
Total killed and injured.....	219	139	295	18

RECAPITULATION.

Total killed.....	38
Total injured.....	633
Total killed and injured.....	671

TABLE 4.—Details of Table No. 1.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Subclass.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....		4		4		4		
	2 Ice or snow.....								
	3 Parting of train.....	1	12		6		9		1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	3	52	2	38	3	88	2	11
	5 While setting brakes.....	1	33	1	16		55		1
	Fell from—								
	6 Coal car.....	1	4	1	7		1	2	2
	7 Freight car other than box or coal car.....	4	31	2	21	2	14	9	32
	8 Engine or tender.....	10	121	2	58	2	58	2	14
C7	9 Passenger car.....	2	12		3	2	2	3	2
	10 Engines, tenders, or cars (all kinds) not in motion.....		48	1	26		7		59
	11 Miscellaneous causes.....	10	203	1	46	8	202	1	95
	12 Not clearly explained.....	11	69	2	16	7	41	6	26
	13 Slipped getting on moving trains or cars.....	5	125	1	63		39	4	74
	14 Jumping off moving trains.....	1	145	2	95	1	81	6	66
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....		43		5		10	1	4
	16 Fell from engines or cars by reason of defective handholds and sill steps.....		43		27	1	48		6
	17 Getting on or off moving engine.....	2	162	1	123	1	104	5	37
	18 Caught in frog, guard rail, or switch.....				1		2	1	1
	Total.....	51	1,107	16	555	27	765	42	431

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor, and upon conviction thereof by a court of competent jurisdiction shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A) showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 25 shows 110 passengers killed in train accidents, three collisions and one derailment being responsible for 80 deaths in this class. The number of passengers killed from other causes (mostly their own negligence) also shows a large increase. One of the most serious collisions was due to the misreading of a dispatcher's order, and another to a mistake in sending or receiving the order.

Bulletin No. 26 shows a marked decrease in casualties as compared with preceding quarters, a large falling off in railroad traffic having taken place. The list of "prominent" train accidents includes only three cases which may be classed as notable.

Bulletin No. 27 shows further marked decreases in casualties, incident to the large falling off in railroad traffic. The number of passengers and employees killed in train accidents (125) is the smallest since the monthly records were established. The most fatal accident in this quarter was a collision at a street crossing, where 5 passengers in an electric car were killed.

^a For notes on Bulletins 1-16, see Bulletin No. 17; for notes on Bulletins 17-24, see Bulletin No. 30.

Bulletin No. 28 recorded the smallest number of passengers killed in train accidents (13) ever reported in the quarterly records. The total of passengers and employees killed in train accidents (112) was 13 less than the previous low record (125, Bulletin 27). Of the 13 passengers killed in train accidents, 7 were victims of a butting collision on an electric railroad.

Bulletin No. 29 showed totals far smaller than the corresponding quarter one year previous, but the diminution in the number of casualties, which had continued during the year of depression, seemed to have been checked. The number of passengers killed in train accidents was 53, and there were 8 notable collisions.

Bulletin No. 30 recorded 34 passengers killed in train accidents (including 15 victims of a forest fire). One collision resulted in 8 deaths of passengers and two derailments killed 16 employees.

Bulletin No. 31, in part, continues the favorable showing of the quarter one year previous (Bulletin 27), though it covers a period of considerable revival of business. One collision caused 20 deaths and 28 injuries.

Bulletin No. 32 shows a total of 99 passengers and employees killed in train accidents—the lowest quarterly record thus far shown. It is to be observed, however, that a butting collision, causing the death of 9 passengers and 1 employee, occurring on an electric road, was not included, the railroad company having failed to make a report of the accident, as required by law. The quarter in 1908 with which this one is most naturally compared (Bulletin 28) had one collision on an electric line in which 7 persons were killed.

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UNIV. OF MICH

41 Interstate Commerce Commission
Washington, D. C.

APR 2 1910

Accident Bulletin

No. 34

Railroad Accidents in the United States

During October, November, and December
1909



Washington
Government Printing Office
1910

ACCIDENT BULLETIN NO. 34

Collisions and Derailments of Trains and

Casualties to Persons

on the Railroads of the United States

during the months of

October, November, and December, 1909

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



WASHINGTON
GOVERNMENT PRINTING OFFICE
1910

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JAMES S. HARLAN, of Illinois.

EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS

IN THE UNITED STATES DURING THE THREE MONTHS
ENDING DECEMBER 31, 1909.

The number of persons killed in train accidents during the months of October, November, and December, 1909, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the "accident law" of March 3, 1901, was 244, and of injured, 4,149. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 22,922 (1,073 killed and 21,849 injured). Accidents to employees resulting in slight injuries, which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident, are not reported. These reports deal only with employees on duty and passengers. The casualties to passengers have been divided into three classes. Class *a* includes all ordinary passengers. Class *b* includes passengers traveling on freight trains. Class *bb* includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight. The reported casualties are classified in Table No. 1, given below.

The statistics here given present the record of the standard railroads, for convenience called "steam roads," in distinction from electric railways. The accident statistics of those electric lines on which interstate traffic is carried, and which, therefore, are subject to the federal accident law, are given in a second table, No. 1E, and in Table No. 2E.

TABLE NO. 1.—*Casualties to persons—October, November, and December, 1909.*

Causes.	Passengers (<i>a</i> and <i>b</i>).		Persons carried under agree- ment or contract (<i>bb</i>).		Total (<i>a</i> , <i>b</i> , and <i>bb</i>).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	14	1,393	9	168	23	1,561	60	577	14	237
Derailments.....	14	510	2	106	16	616	47	314	3	34
Miscellaneous train accidents, including loco- motive-boiler explosions.....		41		4		45	17	246	4	45
Total train accidents.....	28	1,944	11	278	39	2,222	124	1,137	21	316
Coupling and uncoupling.....							14	272	16	137
While doing other work about trains or while attending switches.....							18	2,482	7	851
Coming in contact with overhead bridges, structures at side of track, etc.....	1	6	1	3	2	9	19	137	6	60
Falling from cars or engines or while getting on or off.....	46	692	4	19	50	711	64	1,542	23	653
Other causes.....	12	663	2	83	14	746	54	255	25	132
Total (other than train accidents).....	59	1,361	7	105	66	1,466	169	4,688	77	1,833
Total, all classes.....	87	3,305	18	383	105	3,688	293	5,825	98	2,149

TABLE NO. 1.—*Casualties to persons—October, November, and December, 1909—Cont'd.*

Causes.	Yard trainmen (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	20	145	26	147	120	1,106	143	2,667
Derailments.....	7	51	4	49	61	448	77	1,064
Miscellaneous train accidents, including locomotive-boller explosions.....	1	41	2	41	24	373	24	416
Total train accidents.....	28	237	32	237	205	1,927	244	4,149
Coupling and uncoupling.....	34	393	2	35	66	837	66	837
While doing other work about trains or while attending switches.....	13	1,070	6	641	44	5,044	44	5,044
Coming in contact with overhead bridges, structures at side of track, etc.....	5	134	.....	16	30	347	32	356
Falling from cars or engines or while getting on or off.....	45	1,126	35	375	167	3,696	217	4,407
Other causes.....	31	142	346	5,781	456	6,310	470	7,056
Total (other than train accidents).....	128	2,865	389	6,848	763	16,234	829	17,700
Total, all classes.....	156	3,102	421	7,085	968	18,161	1,073	21,849

The quarter here reviewed was one in which there was a large volume of traffic on the principal railroads of the country, and those classes of casualties which occur mainly in the freight-train service show heavy totals. The only collision in which more than 5 persons were killed was that shown in the table of causes as No. 10, and the victims in that case were not passengers; yet the total of passengers killed in collisions is 23. The only derailment in which more than 3 persons were killed was that shown in the table as No. 12. But though accidents which are very prominent by reason of the large number of fatalities attending them are thus shown to have been comparatively few, the list of causes, as shown in the 15 notes explanatory of causes in Table 2A is more than usually varied. The comparisons of the principal totals follow:

TABLE NO. 1A.—*Comparisons of principal items with last bulletin and with one year back.*

	Bulletin 34.	Bulletin 33.	Bulletin 30.
1. Passengers killed in train accidents.....	39	56	34
2. Passengers killed, all causes.....	105	104	96
3. Employees killed in train accidents.....	205	137	150
4. Employees killed in coupling.....	66	38	44
5. Employees killed, all causes.....	968	748	700
6. Total passengers and employees killed, all causes.....	1,073	852	796

The total number of collisions and derailments in the quarter now under review was 3,206 (1,745 collisions and 1,461 derailments), of which 257 collisions and 155 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents

amounted to \$2,733,830. Given more in detail, these facts appear as below (collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported):

TABLE NO. 2.—Collisions and derailments.

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	426	\$421,188	47	916
Collisions, butting.....	221	542,737	53	920
Collisions, train separating.....	119	38,696	2	57
Collisions, miscellaneous.....	979	445,343	41	774
Total.....	1,745	1,447,964	143	2,667
Derailments due to defects of roadway, etc.....	303	322,808	23	363
Derailments due to defects of equipment.....	680	512,275	8	135
Derailments due to negligence of trainmen, signalmen, etc.....	119	76,297	4	97
Derailments due to unforeseen obstruction of track, etc.....	82	93,670	20	116
Derailments due to malicious obstruction of track, etc.....	16	25,735	5	63
Derailments due to miscellaneous causes.....	261	255,081	17	290
Total.....	1,461	1,285,866	77	1,064
Total collisions and derailments.....	3,206	2,733,830	220	3,731
Total for same quarter of 1908.....	2,684	1,940,133	173	2,616
1907.....	3,964	2,962,470	197	3,813

Following is the usual list of class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

TABLE NO. 2A.—Causes of 44 prominent train accidents.

NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to en- gines, cars, and road- way.	Reference to record.	Cause.
1	R	F. and P.....	0	149	\$1,650	43	Passenger train standing at station (9:15 p. m.) not properly protected at rear; atmosphere very smoky from forest fires. (The list of casualties in this accident includes 25 passengers entered as injured who "claimed" to have been injured.)
2	R	F. and F.....	0	0	1,700	18	False clear block signal. (See note in text below.)
3	B	F. and F.....	1	1	2,085	51	Engineman of engine without train disregarded order to wait at a certain station. Fireman, 23 years old, in service one month, was killed.
4	B	F. and F.....	0	1	2,326	98	Train standing at water tank (9:45 p. m.) not properly protected by flagman; men in charge of train under the influence of liquor.
5	B	F. and F.....	0	0	2,690	52	Conductor and engineman, reading a number of orders, confused them and failed to wait at M, as directed in the order; but they also ran past an automatic block signal indicating stop.
6	B	F. and F.....	0	0	3,300	100	Men in charge of train waiting on a siding (1 a. m.) slept, and then mistook or carelessly assumed the identity of a passing train.
7	R	P. and F.....	3	15	3,407	42	Freight entering side track delayed; flagman did not go back to signal following passenger train. The persons killed were passengers on the freight train.

TABLE NO. 2A.—Causes of 44 prominent train accidents—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
8	R	F. and F.....	0	2	4,000	86	False clear block signal. The leading train had been in block section an hour. Engineman also at fault for excessive speed in yard.
9	B	P. and F.....	0	14	4,027	12	Air brakes of freight train ineffective approaching station; angle cock on car next to engine had been closed; cause unknown.
10	R	F. and F.....	15	41	4,100	1	Work train not protected by flag. (See note in text below.)
11	M	P. and F.....	0	4	4,300	103	Passenger train (4 a. m.) ran into side of freight at crossover; engineman asleep. Fireman did not look for signal. Engineman on duty twelve hours.
12	M	P. and F.....	4	0	5,300	54	False clear block signal, due to fault in interlocking machine. (See note in text below.)
13	B	P. and F.....	2	33	6,100	90	Misplaced switch. (See note in text below.)
14	B	F. and F.....	2	4	6,500	16	Engineman of southbound train (who was killed) forgot meeting order. Conductor in caboose ostensibly was on the lookout approaching the appointed meeting station, but was not quite so vigilant as he should have been.
15	M	P. and F.....	5	14	8,200	92	Switching on main track in face of passenger train. (See note in text below.)
16	M	F. and F.....	0	4	9,000	104	Eastbound train approached meeting point not under control; air brakes inoperative because angle cock behind tender had been closed by a trespasser.
17	B	F. and F.....	0	3	10,377	4	Conductor and engineman westbound forgot an order requiring them to wait at G; both experienced men.
18	B	P. and F.....	2	20	10,584	93	Misplaced switch. (See note in text below.)
19	R	F. and F.....	0	2	10,875	89	Failure to protect by flag. (See note in text below.)
20	B	P. and F.....	3	5	11,652	46	Flagman fell asleep. (See note in text below.)
21	B	F. and F.....	1	3	12,200	5	Engineman disregarded order from dispatcher; and also disregarded stop signal given by a flagman.
22	B	F. and F.....	0	0	12,300	13	Dispatcher, overlooking an order on his record, sent out opposing extra trains without making for them a meeting point.
23	B	F. and F.....	1	5	12,600	11	Operator failed to deliver meeting order and engineman (who was killed) ran past an automatic block signal indicating stop.
24	R	P. and F.....	1	25	13,600	85	Engineman of freight ran past automatic block signals. Flagman of standing passenger train also held at fault.
25	B	P. and P.....	1	2	15,160	80	Failure to flag. (See note in text below.)
26	B	F. and F.....	5	4	20,000	96	Conductor and engineman east bound miscalculated time. (See note in text below.)
27	B	P. and P.....	1	82	21,000	22	Misreading of time by watch. (See note in text below.)
28	R	P. and P.....	3	41	21,500	82	Engineman ran past distant and home automatic signals indicating stop.
29	B	P. and F.....	4	36	23,800	20	Misplaced switch. (See note in text below.)
30	B	P. and F.....	0	4	25,000	44	Freight starting out of station ran past fixed signal indicating stop.
31	B	P. and F.....	3	23	90,000	45	Mistake of engineman in reading order. (See note in text below.)
Total collisions			57	537	379,333		

DERAILMENTS.

1	D	P.....	1	53	\$2,242	36	Broken rail. (See note in text below.)
2	D	P.....	0	5	3,000	41	Broken tender wheel. Steel tire became loosened by reason of bolts of retaining ring having been sheared off from some cause unknown.
3	D	F.....	1	2	5,000	67	Landslide (5 a. m.). Track watchman assigned to this section had deserted his post.
4	D	P.....	0	11	5,694	74	Unstable tender. (See note in text below.)
5	D	F.....	0	0	7,500	123	Runaway on steep grade; freight train without engine had been left standing on grade with no hand brakes (or insufficient hand brakes) set.
6	D	P.....	2	19	11,000	121	Excessive speed through crossover track.

TABLE NO. 2A.—Causes of 44 prominent train accidents—Continued.

DERAILMENTS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to en- gines, cars, and road- way.	Reference to record.	Cause.
7	D	P.....	1	8	11,300	35	Trestle bridge weakened by fire. Dense fog pre- vented engineer from seeing fire until very near it.
8	D	P.....	2	72	11,700	125	Excessive speed (40 miles an hour or faster) enter- ing 10° curve. Track in good condition. En- gineer and fireman (who were killed) both experienced men.
9	D	F.....	0	0	12,000	117	Broken wheel.
10	D	F.....	1	6	19,900	76	Runaway on steep grade. Cause not discovered; probably bad management of air brakes; en- gineer killed.
11	D	P.....	1	4	23,650	38	Rock on track in cut. Cut was in such good condi- tion that the employment of a track watchman had not been deemed necessary.
12	D	P.....	12	29	48,000	115	Broken rail. Speed of train 40 miles an hour; cur- vature of line 1°; descending grade 1 per cent. Rail, 85 pound, in service three years. Rail found to have defect apparently due to over- heating in manufacture. Ten passengers killed.
13	D	P.....	3	47	63,000	112	Spreading of track; straight line; speed, 50 miles an hour. Cause obscure.
Total.....			24	256	223,968		
Total collisions and derailments.....			81	793	603,319		

Collision No. 2 was due primarily to the false clearing of a block signal. An eastbound train, *P*, was run from block station R to block station N without being announced by one signalman to the other. The “controlled manual” apparatus, which should have prevented the clearing of the signal at R, except after consent had been received from N, was out of order, so that the signalman at R could clear it wrongfully. The unlocking of the lever lock was due to grounding of the wire controlling the electric lock. Train *P* was held at N because of a preceding train in the block ahead, and while standing there, R sent on another train *W*, and it appears that this was accepted by N, the signalman at N not being aware that train *P* was standing a short distance in the rear of his home signal. The flagman of the standing train, *P*, is held responsible for not having gone back with stop signals. Both this man and the signalman at R had had several years’ experience. The signalman had been on duty only fifty-five minutes. This signalman claims that he announced both trains but his statement is not accepted by the superintendent.

Collision No. 10, killing 14 laborers on a work train and injuring 38, and also killing 1 and injuring 3 trainmen, was caused by the forgetfulness of the conductor and engineer who, while occupying the main track with a work train, neglected to send out a flag to stop trains from the west. The collision occurred about noon. The conductor and engineer of the work train, when starting out in the morning, about 7 o’clock, were handed copies of an order requiring

them to protect their train against a certain eastbound train after 10.30 a. m. This they did not do, both having forgotten the order. Both were experienced men, classed as capable, careful, and intelligent.

Collision No. 12, in which 4 employees were killed, was due to a fault in an electro-pneumatic interlocking machine. An eastbound passenger train, approaching J at ordinary speed, was turned through a cross-over track and collided with a locomotive moving westward on the westbound track, though the signals, both home and distant, approaching the cross-over, indicated that the switch was right for the passenger train to proceed along the main line. A train had passed through this cross-over a few minutes before, and after its passage the signalman in the cabin had moved the proper lever to reset the switches of the cross-over in position for movements along each of the two main tracks. For some reason unknown the switches did not respond to this movement of the lever and remained set for train movements through the cross-over. Assuming that the route was set along the main tracks "straight," the signalman cleared the signals for the passenger train. With the interlocking apparatus in good order he would have been unable to do this, as the signal levers would have been locked immovable; but by the loosening of a contact spring in the machine an improper electrical contact was completed, and the machine therefore failed to perform its function of preventing the wrongful clearing of the signals for a main-track movement. The trouble with the spring was that it was not properly fastened to its base. A more secure method of fastening for apparatus of this kind has now been adopted by the road.

Collision No. 13 was due to the misplacement of a switch by a brakeman 22 years of age, of seventeen months' experience, and of good character. The freight train, eastbound, was standing on a side-track waiting for a westbound passenger train. The brakeman was under the impression that his train had entered the side track because the engine was leaking and for no other reason, and that as soon as the engineman could get up steam the train would proceed. On this presumption he set the switch to connect the siding with the main line; and a few minutes afterwards the passenger train came on at full speed, and, running into the siding, collided with the standing freight train. The line being curved and the view obscured, the passenger engineman had no view of the switch until he was very close to it. The fireman of this train, who could have seen this switch farther away, was killed.

Collision No. 15, occurring very early in the morning, before daylight, was due to the misconduct of a switch tender. The line on which it occurred is equipped with automatic block signals, and at the yard in question the yardmaster, who supervises the operations of switching engines, authorizes such engines to occupy the main track

when a passenger train is due, provided he has received definite information that the train is behind time. Before allowing a switching engine to enter the main track a switch must be set connecting the siding or cross-over with the main track, and the setting of this switch automatically causes the setting of the block signal for that section in position to stop any approaching train. At each switch there is an electric indicator by observing which the attendant, when he is about to set a switch, can see whether or not the block section is already occupied; that is to say, whether or not an approaching train has already passed the block signal. When the indicator thus indicates, he must not set the switch for the siding. In this case the switch tender, a man of three years' experience, set the switch for the siding without looking at the indicator and without having received authority from the yardmaster. His statement that he had received a hand-motion signal from the yardmaster is not accepted by the superintendent, the evidence showing that such could not have been the case.

Collision No. 18 was due to a misplaced switch, the lock of which had been taken off and the light of which had been extinguished; and the officers of the road are satisfied that the switch was misplaced by unknown persons intending to wreck the passenger train. The collision occurred at about 9 p. m. The switch was known to have been in the right position and with its light properly burning at 7 p. m. It had been used at 8:25 p. m., but as the switch rail and all the other appurtenances were found in perfect condition, it is concluded that the switch could not have been left misplaced at that time. The approach to the switch is on a curve of 6°, shortening the view, and there was also a dense fog; and, in consequence of the fog, the engineman did not note the absence of the light until he was very close to the switch. This engineman was a runner of twenty-nine years' experience.

Collision No. 19, occurring on a single-track line, is reported as due to wrongful or careless dependence on an automatic block signal. A freight train about to enter the siding at S was not stopped at the proper place and had to be set back a short distance (on the main line) to be in position to enter the siding. It was moved back so as to foul the next block section in the rear, but no flagman was sent back, and a following train came on and collided with the rear of the first named, the second train having entered the block (under a clear signal) before the backing freight entered it. The men in charge of the backing freight believed or assumed that the signal at their end of the block was clear, indicating that no train was approaching; but the superintendent concludes that this signal changed from "clear" to "stop" before the caboose passed it. The omission of the train to stop before reaching the side-track switch is reported as due to an error on the part of a telegraph operator.

Collision No. 20, between a northbound passenger train and southbound freight, was due to the neglect of a flagman and the failure of a delayed freight train to give suitable notice of its whereabouts. The freight was delayed 5 miles north of D. After about four hours the engine of this freight ran forward to D, carrying a flagman, who was left there to stop the northbound train, the engine then returning to its train, one car of which was off the track. The flagman, after remaining at this station about seven hours, was sitting on the steps of the caboose of a freight train standing on the side track, with his lantern on one of the lower steps of the caboose, between his feet. While so sitting he fell asleep and was not aroused until the northbound passenger train came along and passed him; and then it was too late to give a signal to the passenger train, which passed on and collided with the freight about 4 miles north. The red lantern, being on the steps of the caboose, was hidden from the view of the engineman of the passenger train. It appears that this flagman was wide awake only a few moments before the passenger train passed. He had been in the service seven months. The conductor of the freight train is censured for not having advised the train dispatcher of his movements. The operator at D was authorized by the dispatcher to clear his fixed signal for the passenger train. The conductor and the flagman of the freight had been on duty sixteen hours and fifty-nine minutes, their train having been delayed eleven hours and forty-eight minutes by the breaking down of a car. The operator at D and the dispatcher are held blameless, for the reason that the delayed freight was not obliged to come to D to clear the passenger train, but could use a side track between D and the point where the breakdown occurred. Both dispatcher and operator therefore were held justifiable in assuming that the men in charge of the freight would protect their train adequately by flag.


Collision No. 25 occurred within yard limits, and the responsibility is charged against the conductor and engineman of the northbound train and the engineman of the southbound. The northbound train, belonging to road A, was running on the track of road B, this being its regular route for a short distance within the yard. Its right on the track of road B was the same as that of a yard train—it must keep out of the way of regular passenger trains of road B. In this case the passenger train of road B was one hour and fifty minutes late, and the train of road A appears to have occupied the main track without being officially informed as to how late the southbound train was. The collision occurred at the diverging track where the northbound train was to leave the track of road B. A flagman was sent out to stop the southbound train; but he did not succeed in doing so. Either he did not start soon enough or did not go far enough, or else the southbound engineman did not properly heed the flagman's signals. The report is inconclusive, because of a disagreement between

the officers of the two roads as to the facts in the case and the conditions governing. Under the rule the southbound train should have approached this junction with speed under full control.

The train at fault in collision No. 26 was an eastbound regular freight holding an order to run ten minutes late. It ran only three minutes late. The engineman says that he trusted to his memory that he was due at F at 7:39; whereas that was the time by a time table which had expired, and the correct time was 7:49. The conductor says that before reaching F he examined the time table, but by mistake read the time against T, the next station west of F.

Collision No. 27 between a southbound regular and a northbound extra passenger train, occurring about 10 p. m., badly damaged both engines and destroyed three cars carrying passengers. One passenger was killed and 75 passengers and 7 trainmen were injured. The northbound passenger train was running on a telegraphic order, according to the terms of which it should have kept clear of the southbound. The primary reason for its failure to do so, according to the report, was the mistake of the conductor in reading the time by his watch. He says that he gained the impression that he had fifteen minutes more time to reach F than actually was the case. The trains met on a curve at speeds estimated at 30 or 40 miles an hour. The conductor's explanation of his mistake with the watch was that while his regular watch was being repaired he carried one in which the dial was in a different position as related to the top of the case; but it appears that at the time of the accident he had resumed the use of his own watch, and had been carrying it for several days. This conductor had been in the service sixteen years. The engineman was also at fault for disregarding the time order, but the report has no reference to his testimony, as he was badly injured and was confined to the hospital.

Collision No. 29 was due to the careless misplacement of a switch by a brakeman. A westbound freight train stood on the siding waiting for an eastbound passenger train to pass. While it stood there the front brakeman of the train went to the switch, some distance forward from the place where the locomotive stood, unlocked it, and turned it so as to let the passenger train enter the side track. The passenger train came on at about 50 miles an hour and collided with the freight engine. Both engines were very badly damaged, and the first two cars in each train were demolished. Two mail clerks, 1 engineman, and 1 fireman were killed, and 30 passengers and 6 employees were injured. The engineman of the freight is held blameworthy for not seeing that the switch near his engine was in the proper position; the passenger engineman is held blameworthy for not observing a semaphore signal which was in the stop position, warning him that the switch was wrong; the conductor and the fireman of the freight are also held responsible, as well as the engine-



man, and the fireman on the passenger train is held blameworthy for not cooperating with his engineman in keeping a lookout for the semaphore signal. The brakeman primarily at fault has been in the service three years, the passenger engineman twenty-three years, and the others named two years or more each, except the passenger fireman, whose term of service has been only eight months. The semaphore which was in position to warn the passenger engineman that the switch was in the wrong position is situated exactly opposite the switch and is 18 feet high. It moves simultaneously with the switch. It was clearly visible for many hundred feet, the line of the road being straight for 2 miles west. It had been in the warning position two minutes or more before the passenger train arrived.

Collision No. 31, occurring at 12:10 a. m., and causing 3 deaths and 23 injuries, was due to the mistake of an engineman in reading an order. This engine was running without a train and there was no conductor. It was running west, backward, and met an eastbound passenger train at a point where, in consequence of a curve in the line and a hill on one side, there was a very short view. The three men on the engine of the passenger train, engineman, fireman, and pilot, were killed. The westbound engine had been standing for some time at L, on a side track, about 1,200 feet west of the station. On receiving from the telegrapher at the station an order to run to the next station, the engineman directed the fireman to set the switch for the movement to the main line. After this movement the fireman reset the switch for the main line and the engine proceeded. While waiting on the side track the engineman had made some repairs to his engine, one of the driving-wheel springs having got slightly out of place; and in the explanation which he gave after the collision he says that while at work on the engine he sustained a blow by a hammer on his forehead and that, temporarily, he lost his memory; and that he had no recollection of receiving the order or of starting his engine, nor of the collision. The testimony of the fireman, however, indicates that at no time did the engineman behave otherwise than in a rational manner, nor had he said anything to the fireman or to the telegrapher (who delivered the order) about having been hurt.

The order directed the engine to run from L to P, but to meet the eastbound passenger train at L; that is to say, the movement to P could not be begun until after the passenger train had arrived at L. The engineman proceeded, however, in precisely the same way that he would have done had there been no meeting clause in the order.

This engineman is 29 years old and had been in the service of the company about nine months, with a satisfactory record up to the time of this collision. He was thrown out of the cab and sustained some injuries. He had been on duty about sixteen hours and thirty minutes. His regular hours of duty on that day were from 7 a. m. to 7 p. m., on a pushing engine, but he had been delayed about two

hours on account of a blockade of trains due to the failure of the boiler of a locomotive.

The very heavy loss occasioned by this collision is due in part to the destruction of six passenger cars by fire. When the train came to rest after the collision, one of the cars was standing immediately over a large mass of burning coals which had fallen out of the fire box of one of the engines, and before it was possible to extinguish the fire an acetylene tank exploded, spreading the fire and rendering it uncontrollable.

Derailment No. 1 was due to a broken rail. The engine passed over the track at this point in safety, but the engineman felt a jar and applied the brakes so that his train was stopped in about 900 feet. The first seven cars of the train were derailed, and the eighth and ninth (the last) were derailed and overturned. The rail was of a size weighing 100 pounds to the yard, and was 33 feet long, laid in 1904. There was a flaw near one end. It appears that the rail had been broken by a train which passed over the track about thirty minutes ahead of the one which was derailed. In this leading train some disturbance was noticed by a messenger in the tenth car, and also by the conductor. The conductor pulled the cord to give the whistle signal in the cab of the locomotive to stop the train, but the air pipe through which this signal would have to be effected had been broken, evidently at the time the train passed over the broken rail, and therefore no signal reached the engine. The disturbance lasted only two or three seconds, and as the train ran on smoothly the conductor did not attempt to apply the air brakes; but he went to the rear to consult the rear brakeman, and the train ran more than a mile before it was stopped, the stopping being finally effected by the automatic application of the air brakes, due to the bursting of an air hose, caused primarily, no doubt, by something flying up from the track at the time the broken rail was passed. At the same time several pedestals and journal boxes were broken. The flagman of this train was sent back to search for the defect or obstruction, but he did not reach the point of trouble until after the following train had passed over the broken rail and had been derailed.

Derailment No. 4 is attributed to faults in the tender of the locomotive. The report says: "The speed of the train was about 45 miles an hour. The tender was about half full of water, and contained about 18,000 pounds of coal, placed mostly toward the back of the tender, and therefore resting principally on the rear truck, leaving the front truck with a light load only. The center of gravity of the tender is high. The vertical oscillation or galloping of the tender, due to unevenness in track, would tend to still further decrease the weight on the front truck; and this, together with the swinging or rocking of the tender allowed by the side-bearing clearance, which was slightly excessive, caused by the intermittent soft spots or

imperfections in the low rail of the track, further influenced by the surging of the water in the tender, would at the moment when these effects acted in the same direction produce side strain sufficiently intense to relieve some of the wheels of their load, and even lift the wheels, and naturally would first affect the guiding wheels of the truck having the least load, which in this case was the first pair of wheels.

"This derailment can only be attributed to the combination of all or part of the effective causes named. This conclusion is borne out by the fact that there have been quite a number of mysterious tender derailments where the leading wheels left the track, not only on our own railroad, but on others; and while opinions have varied somewhat as to the cause, in many cases it has been attributed to what might be termed the synchronism of the different motions of the tender itself and that of the engine, with the undulations produced by track imperfections."

TABLE 3.—*Causes of accidents to employees in coupling and uncoupling cars.*

Subclass.	Causes.	Train-men.		Train-men in yards.		Yard train-men (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		15		9		30		1
2	Adjusting coupler, cars accidentally started.....		6	2	5	1	8		2
3	Careless manipulation of uncoupling lever.....		8		5		11		
4	Cars not equipped with automatic coupler.....		1				1		2
5	Coupler broken, using link and pin or chain.....		5		2		1		
6	Coupling damaged cars.....		7	2	7	3	19		4
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		13		3	1	8		
8	Coupling with chain or other emergency appliance because of uneven track.....								
9	Coupling or uncoupling safety chains.....		3		2		6		3
10	Fingers or hand caught between uncoupling lever and body of car.....		50		25		65		4
11	Uncoupling without using lever (unnecessary).....	1	3		6		13		
12	Uncoupling without using lever, uncoupling lever not in working order.....	1	17		16	2	35		1
13	Foot caught in frog, switch, or guard rail.....	1	1	2	2	2	9		1
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	3	40	3	9	2	35		4
15	Opening knuckle when cars were near together, engine accidentally started.....		2		3		1		3
16	Opening knuckle, part of defective coupler fell on foot.....		12		1		14		
17	Opening knuckle, lost footing.....	1	9	2	5	3	19		1
18	Riding on car to uncouple, slipped off.....		8		3	2	14		1
19	Struck by object at side of track.....	1	7		5		13	1	
20	Caught by unexpected movement of car, due to slack running in.....	2	14	1	10	4	18		
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	1	2		1	3	6		2
22	Uncoupling moving cars and lost footing.....	1	13	1	4	5	19		1
23	Parts hard to move, causing delay.....		4		3				
24	Went between cars unnecessarily and contrary to rule.....		11		2	3	16	1	1
25	Hand caught between projecting load and end of next car.....		1		1		2		
26	No witness (fatal injury).....	2		3		2			
27	Other causes.....		14		4		20		3
28	Unexplained.....		6		4	1	10		1
	Total.....	14	272	16	137	34	393	2	35

Details of injuries included in Table 3, subclass 27.

- O. 1. Clothes caught on corner of car.
- O. 2. Car ran over torpedo, which exploded, injuring legs.
- O. 3. Lump of coal fell off car, bruising head.
- O. 4. Caught hand in brake wheel.
- O. 5. Foot caught under pilot of engine.
- O. 6. Stepped off culvert.
- O. 7. Slipped and fell, spraining ankle.
- O. 8. Foot mashed under engine.
- O. 9. Cut finger on sliver of steel.
- O. 10. Door fell off car.
- O. 11. Air hose flew up, striking knee.
- O. 12. Struck on knee by air hose.
- O. 13. Coupling engine to tender, caught finger in coupler.
- O. 14. Finger mashed by air hose flying up.
- N. 1. Lump of coal rolled off car, breaking finger.
- N. 2. Car door fell on hand.
- N. 3. Struck in face by casting which broke off coupler.
- N. 4. Steam hose uncoupled, scalding hands.
- N. 5. Shoulder bruised by piece of iron falling from car.
- N. 6. Clothing caught on car, causing a fall.
- N. 7. Air hose struck leg.
- N. 8. Air hose struck knee.
- N. 9. Caught finger under coupling pin.
- N. 10. Caught finger under lip of coupler.
- N. 11. Air hose flew up, bruising ankle.
- N. 12. Bumped head on brake beam.
- D. 1. Hand slipped behind drawbar, cutting off finger.
- D. 2. Foot caught under wheel.
- D. 3. Struck by corner of car.
- D. 4. Hand caught by reason of coupler being covered with ice.
- D. 5. Struck by car; ribs fractured.
- D. 6. Stepped on piece of coal.
- D. 7. Standing on platform, when platform broke.
- D. 8. Caught by log which projected over end of car.
- D. 9. Stepped on nail.
- D. 10. Stepped on nail.
- D. 11. Stepped on nail.
- D. 12. Air hose flew up, cutting face.
- D. 13. Piece of iron fell from car.
- D. 14. Stepped on lump of coal, spraining ankle.
- D. 15. Foot caught under wheel.

TABLE 3A.—Nature of injuries to employees in coupling and uncoupling cars.

Injuries.	Trainmen.	Trainmen in yards.	Yard trainmen.	Other employees.
Loss of feet.....	4	1	5	.....
Loss of legs.....	3	1	4	.....
Loss of arms.....	3	.....	1	1
Loss of hands.....	2	.....	1	.....
Loss of fingers.....	13	4	15	.....
Loss of toes.....	2	.....	2	.....
Fractured skull.....	.....	.....	.....	1
Fractured leg.....	4	1	1	.....
Fractured arm.....	.....	2	6	1
Fractured collar bone or ribs.....	4	3	7	.....
Fractured other bones.....	8	2	5	1
Contusion of head or body.....	30	19	60	6
Contusion or laceration of feet.....	25	9	33	5
Contusion or laceration of toes.....	4	5	14	.....
Contusion or laceration of legs.....	17	6	30	5
Contusion or laceration of arms.....	16	15	19	2
Contusion or laceration of hands.....	37	21	35	3
Contusion or laceration of fingers.....	72	36	111	8
Dislocation.....	2	1	1	.....
Internal injuries.....	3	.....	2	1
Sprains.....	15	5	25	1
Miscellaneous.....	8	6	7	.....
Total injured	272	137	393	35
Killed.....	14	16	34	2
Total killed and injured	286	153	427	37

RECAPITULATION.

Total killed.....	66
Total injured.....	837
Total killed and injured.....	903

TABLE 4.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Subclass.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....		8		2		6		
	2 Ice or snow.....	1	10		5	1	11		1
	3 Parting of train.....		13		8		8		1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.	1	61	2	30	8	96	1	9
	5 While setting brakes.....	2	50	3	32	1	60		2
	Fell from—								
	6 Coal car.....	3	8	1	3	2	5	2	2
	7 Freight car other than box or coal car.....	4	56	1	14	2	17	3	15
	8 Engine or tender.....	11	170	4	92	2	42	2	26
	9 Passenger car.....	2	8		7		2	1	6
C7	10 Engines, tenders, or cars (all kinds) not in motion.....		79		34	2	34	2	13
	11 Miscellaneous causes.....	9	278		56	6	307	3	74
	12 Not clearly explained.....	16	81	4	21	10	74	5	23
	13 Slipped getting on moving trains or cars.....	4	158	2	44		96	6	31
	14 Jumping off moving trains.....	2	200	1	137	5	133	3	54
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	1	69		5		7		4
	16 Fell from engines or cars by reason of defective hand-holds and sill steps.....		57		22		47		8
	17 Getting on or off moving engine.....	7	233	5	140	6	178	7	45
	18 Caught in frog, guard rail, or switch.....	1	3		1		4		1
	Total.....	64	1,542	23	653	45	1,126	35	375

ACCIDENTS ON ELECTRIC RAILWAYS.

TABLE NO. 1E.—Casualties to persons, October, November, and December, 1909.

	Passen-gers (a and b).		Persons carried under agree-ment or con-tract (bb).		Total (a, b, and bb).		Train-men.		Train-men in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	3	138			3	138		12		
Derailments.....	1	57			1	57		2		
Miscellaneous train accidents.....	1	14			1	14		1		
Total train accidents.....	5	209			5	209		15		
Coupling or uncoupling.....								1		
While doing other work about trains or while attending switches.....							1	14	1	
Coming in contact with overhead bridges, structures at side of track, etc.....	1	3			1	3		2		
Falling from vehicles or while getting on or off.....	6	286			6	286		12		1
Other causes.....		47				47	2	6		
Total (other than train accidents).....	7	336			7	336	3	35	1	1
Total, all classes.....	12	545			12	545	3	50	1	1

TABLE NO. 1E.—Casualties to persons, October, November, and December, 1909—Cont'd.

	Yard trainmen (switching crews).		Other em- ployees.		Total em- ployees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....			1	7	1	19	4	157
Derailments.....						2	1	59
Miscellaneous train accidents.....						1	1	15
Total train accidents.....			1	7	1	22	6	231
Coupling or uncoupling.....	1	1			1	2	1	2
While doing other work about trains or while attending switches.....		2		5	2	21	2	21
Coming in contact with overhead bridges, structures at side of track, etc.....						2	1	5
Falling from vehicles or while getting on or off.....		2	1	4	1	19	7	305
Other causes.....			7	25	9	31	9	78
Total (other than train accidents).....	1	5	8	34	13	75	20	411
Total, all classes.....	1	5	9	41	14	97	26	642

TABLE NO. 2E.—Collisions and derailments.

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	18	\$1,391		49
Collisions, butting.....	14	4,250		51
Collisions, trains separating.....				
Collisions, miscellaneous.....	21	7,000	4	61
Total.....	53	12,641	4	161
Derailments due to defects of roadway, etc.....	4	175		8
Derailments due to defects of equipment.....				
Derailments due to negligence of trainmen, signalmen, etc.....	1	250		5
Derailments due to unforeseen obstruction of track, etc.....	1			1
Derailments due to malicious obstruction of track, etc.....				
Derailments due to miscellaneous causes.....	7	6,250	1	47
Total.....	13	6,675	1	61
Total collisions and derailments.....	66	19,316	5	222

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor, and upon conviction thereof by a court of competent jurisdiction shall be punished by a fine of

not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A), showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 25 shows 110 passengers killed in train accidents, three collisions and one derailment being responsible for 80 deaths in this class. The number of passengers killed from other causes (mostly their own negligence) also shows a large increase. One of the most serious collisions was due to the misreading of a dispatcher's order, and another to a mistake in sending or receiving the order.

Bulletin No. 26 shows a marked decrease in casualties as compared with preceding quarters, a large falling off in railroad traffic having taken place. The list of "prominent" train accidents includes only three cases which may be classed as notable.

Bulletin No. 27 shows further marked decreases in casualties, incident to the large falling off in railroad traffic. The number of passengers and employees killed in train accidents (125) is the smallest since the monthly records were established. The most fatal accident in this quarter was a collision at a street crossing, where 8 passengers in an electric car were killed.

Bulletin No. 28 recorded the smallest number of passengers killed in train accidents (13) ever reported in the quarterly records. The total of passengers and employees killed in train accidents (112) was 13 less than the previous low record (125, Bulletin 27). Of the 13 passengers killed in train accidents, 7 were victims of a butting collision on an electric railroad.

Bulletin No. 29 showed totals far smaller than the corresponding quarter one year previous, but the diminution in the number of casualties, which had continued during the year of depression, seemed to have been checked. The number of passengers killed in train accidents was 53, and there were 8 notable collisions.

Bulletin No. 30 recorded 34 passengers killed in train accidents (including 15 victims of a forest fire). One collision resulted in 8 deaths of passengers and two derailments killed 16 employees.

Bulletin No. 31, in part, continues the favorable showing of the quarter one year previous (Bulletin 27), though it covers a period of considerable revival of business. One collision caused 20 deaths and 28 injuries.

^a For notes on Bulletins 1-16, see Bulletin No. 17; for notes on Bulletins 17-24, see Bulletin No. 30.

Bulletin No. 32 shows a total of 99 passengers and employees killed in train accidents—the lowest quarterly record thus far shown. It is to be observed, however, that a butting collision, causing the death of 9 passengers and 1 employee, occurring on an electric road, was not included, the railroad company having failed to make a report of the accident, as required by law. The quarter in 1908 with which this one is most naturally compared (Bulletin 28) had one collision on an electric line in which 7 persons were killed.

Bulletin No. 33 shows considerable increases in most of the casualty items, marking the expansion of traffic on all of the principal railroads. Five accidents—4 collisions and 1 derailment—caused 47 deaths.



AUG 11 1910

U. S. Interstate Commerce Commission
Washington, D. C.

Accident Bulletin

No. 35

Railroad Accidents in the United States

During January, February, and March
1910



Washington
Government Printing Office
1910

ACCIDENT BULLETIN NO. 35

Collisions and Derailments of Trains
and
Casualties to Persons
on the Railroads of the United States

during the months of

January, February, and March, 1910

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



WASHINGTON
GOVERNMENT PRINTING OFFICE
1910

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RAILROAD ACCIDENTS

IN THE UNITED STATES DURING THE THREE MONTHS
ENDING MARCH 31, 1910.

The number of persons killed in train accidents during the months of January, February, and March, 1910, as shown in reports made by the railroad companies to the Interstate Commerce Commission under the "accident law" of March 3, 1901, was 352, and of injured, 3,717. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 22,332 (1,100 killed and 21,232 injured). Accidents to employees resulting in slight injuries, which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident, are not reported. These reports deal only with employees on duty and passengers. The casualties to passengers have been divided into three classes. Class *a* includes all ordinary passengers. Class *b* includes passengers traveling on freight trains. Class *bb* includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight. The reported casualties are classified in Table No. 1, given below.

The statistics here given present the record of the standard railroads, for convenience called "steam roads," in distinction from electric railways. The accident statistics of those electric lines on which interstate traffic is carried, and which, therefore, are subject to the federal accident law, are given in a second table, No. 1*x*, and in Table No. 2*x*.

TABLE No. 1.—*Casualties to persons—January, February, and March, 1910.*

Causes.	Passengers (a and b).		Persons carried under agree- ment or contract (bb).		Total (a, b, and bb).		Trainmen.		Trainmen in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	4	757	7	165	11	922	69	538	12	189
Derailments.....	46	687	1	78	47	765	64	335	2	29
Miscellaneous train accidents, including loco- motive-boiler explosions.....	52	30	....	12	52	42	37	298	1	71
Total train accidents.....	102	1,474	8	255	110	1,729	170	1,171	15	299
Coupling or uncoupling.....	....	....	....	....	....	....	21	228	9	133
While doing other work about trains or while attending switches.....	....	....	....	....	....	....	11	2,516	9	839
Coming in contact with overhead bridges, structures at side of track, etc.....	....	2	....	....	....	2	13	190	3	68
Falling from cars or engines or while getting on or off.....	27	502	....	19	27	521	53	1,434	24	585
Other causes.....	14	591	4	93	18	684	44	258	34	182
Total (other than train accidents).....	41	1,095	4	112	45	1,207	142	4,626	79	1,817
Total all classes.....	143	2,569	12	367	155	2,936	312	5,797	94	2,116

Causes.	Yard train- men (switch- ing crews).		Other em- ployees.		Total em- ployees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	11	161	11	116	103	1,004	114	1,926
Derailments.....	9	63	8	87	83	524	130	1,239
Miscellaneous train accidents, including loco- motive-boiler explosions.....	....	41	18	50	56	460	108	502
Total train accidents.....	20	265	37	253	242	1,988	352	3,717
Coupling or uncoupling.....	24	411	3	41	57	813	57	813
While doing other work about trains or while attending switches.....	11	1,048	10	527	41	4,930	41	4,930
Coming in contact with overhead bridges, structures at side of track, etc.....	4	125	1	14	21	397	21	399
Falling from cars or engines or while getting on or off.....	31	1,252	30	384	138	3,665	165	4,186
Other causes.....	34	191	334	5,872	446	6,503	464	7,187
Total (other than train accidents).....	104	3,027	378	6,838	703	16,308	748	17,515
Total all classes.....	124	3,292	415	7,091	945	18,296	1,100	21,232

The total number of casualties to passengers in this quarter is swelled by two great disasters, an avalanche in the State of Washington and a derailment in Iowa, both in the month of March. The circumstances of these accidents are briefly summarized in the following pages (following Table 2A). In other respects the present record shows no remarkable differences as compared with the pre-

ceding quarter or with the corresponding quarter one year ago (Bulletin 31), bearing in mind the fact that Bulletin 31 represents a time when there was still an abnormally low volume of traffic on many roads. The principal comparisons follow:

TABLE NO. 1A.—*Comparisons of principal items with last bulletin and with one year back.*

	Bulletin 35.	Bulletin 34.	Bulletin 31.
1. Passengers killed in train accidents.....	110	39	37
2. Passengers killed, all causes.....	155	105	80
3. Employees killed in train accidents.....	242	205	140
4. Employees killed in coupling.....	57	66	44
5. Employees killed, all causes.....	945	968	583
6. Total passengers and employees killed, all causes.....	1,100	1,073	663

The total number of collisions and derailments in the quarter now under review was 3,163 (1,581 collisions and 1,582 derailments), of which 218 collisions and 185 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,607,553. Given more in detail, these facts appear as below (collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported):

TABLE NO. 2.—*Collisions and derailments.*

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	411	\$470,488	36	650
Collisions, butting.....	183	290,574	53	630
Collisions, train separating.....	93	29,826	2	36
Collisions, miscellaneous.....	894	377,818	23	610
Total.....	1,581	1,258,706	114	1,926
Derailments due to defects of roadway, etc.....	318	215,421	8	405
Derailments due to defects of equipment.....	711	599,590	15	204
Derailments due to negligence of trainmen, signalmen, etc.....	78	54,185	1	52
Derailments due to unforeseen obstruction of track, etc.....	126	163,868	14	245
Derailments due to malicious obstruction of track, etc.....	17	31,531	1	22
Derailments due to miscellaneous causes.....	332	284,262	91	361
Total.....	1,582	1,348,847	130	1,289
Total collisions and derailments.....	3,163	2,607,553	244	3,215
Total for same quarter of 1909.....	2,284	1,847,202	163	2,315
1908.....	2,632	1,977,419	114	2,455
1907.....	3,991	3,536,110	355	4,459

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest.

TABLE NO. 2A.—*Causes of 42 prominent train accidents.*

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
1	R	F. and F.....	2	5	\$1,000	7	Failure to heed automatic block signal; also failure of flagman to go back with flag; brakeman's experience, 4 months. (Two drivers killed.)
2	B	P. and F.....	1	7	2,000	13	Engineman of light engine forgot passenger train, although the dispatcher had had occasion, in conversation with him, to mention this particular train; this engineman ran his engine into that of the opposing train, yet never saw it, although the collision occurred in broad daylight; after the crash the engineman supposed that it was due to the explosion of the boiler of his own engine.
3	B	F. and F.....	2	3	2,642	74	Operator wrote wrong station name in order; 2 operators at other stations testify that the name was correctly sent by the dispatcher, and that in the repetition of the order also the name was correctly transmitted by the station operator.
4	B	P. and F.....	0	3	5,131	11	Misreading of order by engineman. (See note in text below.)
5	R	P. and F.....	1	16	5,420	2	Passenger train ran past automatic block signal; engineman and fireman were working on injector; engineman's experience, 41 years.
6	B	P. and P.....	2	8	8,600	9	Collision at meeting point 2 a. m.; westbound train continued on main track contrary to its meeting order, which said it must enter the siding; engineman misread order.
7	B	P and F.....	3	9	8,671	15	Collision occurred in yard; passenger train moving backward, as is customary; an engine without train moving in the opposite direction was travelling on the wrong track. On the rear car of the passenger train—the leading car as it was moving—a passenger standing on the car platform was killed.
8	B	F and F.....	1	4	9,500	6	Engineman of engine without train forgot an order. This engineman decamped. The fireman was killed.
9	B	F and F.....	2	4	10,170	70	Extra train eastbound encroached on time of regular westbound.
10	R	F and F.....	2	4	10,600	5	Conductor and two enginemen disregarded an order to wait at B till 2:40 a. m.; left before that time; did not look at their watches.
11	B	F and F.....	3	5	10,921	72	Operator neglected to deliver order. (See note in text below.)
12	R	F and F.....	1	2	11,200	64	Excessive speed in fog, 3 a. m.; passed automatic block signal without seeing it.
13	R	P and P.....	0	2	11,640	1	Train standing at station not properly protected by flag; following train approached station not under proper control.
14	B	P and P.....	0	6	13,040	43	Ran past station 1,500 feet; meeting order forgotten.
15	B	P and F.....	0	23	13,500	12	Men in charge of freight train waiting on side track failed to identify passing trains. (See note in text below.)
16	R	F and F.....	1	2	14,000	50	Train approached station not under proper control. Engineman disregarded distant and home fixed signals; also signal given by flagman.
17	R	F and F.....	0	2	14,000	66	Double-header freight train running on caution card approached station not under proper control. Both engineman and the conductor are held blameworthy.
18	R	F and F.....	1	3	14,105	42	Engineman failed to observe signals given by flagman. Flagman neglected to use torpedoes. Collision occurred on a bridge, causing the bridge to fall.
19	R	P and P.....	0	11	29,500	40	Second train entered yard not under proper control.
20	B	P and P.....	8	30	30,267	44	Conductor and engineman both overlooked meeting order; both men experienced. Engineman was killed.
Total collisions.....			30	149	225,907		

TABLE NO. 2A.—Causes of 42 prominent train accidents—Continued.

DERAILMENTS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
1	D	P.....	0	0	\$2,616	57	Derailed at night at a derailing switch. The distant signal approaching this derail indicated clear wrongfully, the arm of the signal having been weighted by ice and sleet. The home signal, however, was at stop, and the engineman is held at fault for not heeding this signal.
2	D	P.....	0	24	3,200	55	Metal brake beam of tender dropped on track; had become detached by the breaking of hanger at the eye.
3	D	F.....	4	2	3,300	80	Cowcatcher of engine became loose and dropped so as to catch in a switch. A short time before this accident the cowcatcher, having been found loose, had been put in shape by the men in charge of the train, but they did not secure it adequately. The failure to discover the subsequent loosening was due principally to severe cold weather and snow.
4	D	P.....	0	6	5,300	56	Arch bar of truck of tender broken. Speed of train 60 miles an hour; engine and all cars derailed, yet all of the personal injuries were slight.
5	D	F.....	0	0	5,700	80	Accidental obstruction. (See note in text below.)
6	D	F.....	2	1	2,500	80a	Excessive speed. (See note in text below.)
7	D	P.....	2	10	7,700	83	Excessive speed (60 miles an hour) through cross-over track. Engineman and fireman killed. The cross over was suitably signaled with home and distant signals.
8	D	F.....	0	0	9,477	81	Brake beam fell on track. Wreck partly destroyed by fire from stoves used in freight cars to keep merchandise from freezing.
9	D	F.....	0	0	9,600	58	Derailing switch approached at excessive speed. (See note in text below.)
10	D	F.....	1	3	9,876	59	Snowdrift.
11	D	P.....	5	0	10,000	35	Excessive speed. Engineman and fireman killed. Conductor and engineman were men of 15 years' experience.
12	D	F.....	0	0	10,053	54	Broken wheel. (See note in text below.)
13	D	F.....	0	0	10,200	28	Broken flange.
14	D	F.....	0	0	10,295	83	Broken wheel; chill crack in tread.
15	D	F.....	0	0	10,897	61	Broken rail.
16	D	F.....	2	2	12,000	85	Driving-wheel brake rigging caught on stiffener rail at entrance to side track.
17	D	D.....	0	0	12,000	86	Failure of bridge. The bridge in question was known to have been weakened by a flood and orders had been issued forbidding its use by engines of a certain weight. Disobedience of this order is given as the cause of the accident.
18	D	P.....	51	44	12,558	90	Unknown. (See note in text below.)
19	D	F.....	3	2	13,000	36	Runaway train on 3 per cent descending grade; supposed bad management of air brakes. Fireman killed; engineman badly injured.
20	D	F.....	0	0	14,422	27	Undiscovered.
21	D	F.....	0	0	15,260	52	Broken rail. Wreck partly destroyed by fire from stove and by explosion of 1 car of powder and 2 cars of oil.
22	D	P.....	1	51	31,523	87	Rock slide.
Total derailments....			71	145	221,477		
Total collisions and derailments.			101	294	447,381		

The worst railroad accident in the present record is classed as neither a collision nor a derailment. A passenger train and a mail train, halted at a station because of snow blockades along the line, were swept down the side of a mountain by an avalanche, and 90 persons were killed and 16 injured. These casualties are classified as follows: Passengers, killed 51, injured 7; mail clerks and persons carried on contract, killed 13, injured 2; trainmen, killed 22, injured 6; other employees, killed 4, injured 1. This disaster occurred in the State of Washington on March 1 at a point where no serious snow-slides had occurred before since the settlement of that region.

Another disaster, belonging in the same class with this, but without loss of life, occurred in Nevada, January 1, when a freight train of 36 cars, having been stopped because of washouts on the track ahead of it, was swept away by a great flood. This train had been proceeding slowly, all bridges being examined before crossing, on account of high water, when a washout was encountered. The train was stopped and the conductor went ahead afoot to the next telegraph station to report. While the train was standing a flood arose, the force of which was sufficient to turn the engine over on its side and to wash 28 loaded and 2 empty cars down the stream.

The most disastrous derailment in the quarter under review was that entered in the table as No. 18, in which 45 passengers, 5 trainmen, and 1 other employee were killed, and 33 passengers and 3 employees were injured. It is reported by the railroad company as having been due to some cause not discovered. Two trains, No. 19 and 21, of the Chicago, Rock Island and Pacific were being run over the Chicago Great Western because of a blockade on the Rock Island road. The combined train consisted of 2 engines and 10 cars, the engines moving tender first. The derailment occurred between Green Mountain and Gladbrook, Iowa, March 21. It happened in a cut where the ground at the side of the track was soft, so that the tender of the leading engine, when it jumped the rails, was embedded in the earth so as to make an almost impassable obstacle, against which the rest of the train was forced with undiminished momentum, the engine-man having had no time to apply the brakes.

The trains in question were run over the Chicago and Northwestern from Cedar Rapids to Marshalltown and were delivered to the Chicago Great Western at Marshalltown. Being headed west, it was necessary to detach the engines from the west end of the train and attach them to the east end to proceed eastward over the Chicago Great Western. The man assigned by the Chicago Great Western as pilot called upon the dispatcher at Des Moines, Iowa, for orders. The Chicago Great Western had no table upon which to turn the engines at Marshalltown, but had a wye there. The pilot, however, reported to the dispatcher that he did not believe he could turn the engines on this wye because, as he believed, the curvature was too sharp. After some minor conversation the dispatcher told him that if he could not turn the engines to move them backward. They were switched around the train and started for Waterloo, running tender first. Between Green Mountain and Gladbrook, while running at a speed of probably 22 miles an hour—witnesses varying in their statements, giving the speed from 20 to 25 miles—the leading engine, without warning, left the track in a cut and plunged into the bank, being followed by the second engine. The engines were both in first-class condition, having been duly inspected before leaving Cedar Rapids, and the cars were all in good condition.

It appears that in this cut the track (roadbed) was somewhat soft and spongy; and it may have been this condition of the track that caused the tender of the leading engine to run off. Next to the engines was a Pullman sleeping car and next to this two Chicago, Burlington and Quincy day coaches. Following these was the baggage car and then the cars from train No. 19—baggage car, mail car, coaches, and sleepers. The Chicago, Burlington and Quincy car next to the Pullman car was completely telescoped and the one next to this was telescoped about one-half to two-thirds of its length. In these cars occurred all the loss of life, except two passengers who were in the sleeper, one end of which was badly damaged. Outside of these cars there was no loss of life and but little injury, except to the men on the engines. Both firemen, one engineer, and the pilot were killed or died from injuries.

The conductors and enginemen of the Rock Island trains were employees of long experience. The pilot of the Chicago Great Western was a freight conductor of that road. He had been in the train service of the road about eight years and a conductor six months.

As before stated, the railroad company reports the cause of this derailment as not ascertained. The case was investigated by the board of railroad commissioners of the State of Iowa, and in a report issued by that board the conclusion is reached that "though the cause of the wreck can never be known with absolute certainty, it is indisputable that the track * * * was in a dangerous condition. It lay upon a bed of clay which was wet and springy on account of improper drainage. * * * If there be a primary cause of this wreck, in our judgment it was the soft track resulting from the season and lack of proper drainage." The commissioners believe that engines should be run backward only in the rarest cases of absolute necessity and "then at a much lower rate of speed than 25 miles an hour." They say also that if the two day coaches (next behind the Pullman car) had been in the rear of the train there would have been no such appalling loss of life. "When trains are made up the lighter cars should be in the rear."

The accident reported as derailment No. 6 was the derailment of an engine running without train, and both engineman and fireman were killed, so that the evidence as to the cause is wholly circumstantial. The superintendent concludes that the engine was running at a dangerous speed, but there was no reason for special haste and no conjecture is offered as to why the engineman was running at an unsafe rate. This engine was ditched, but its tender remained standing on the roadbed, and it was the cause of the derailment of a following train (No. 5 in the table). The engineman of the following train is not held at fault, as the road at the point of derailment is on a sharp curve, and it was impossible for him to see more than a short distance ahead. The track at this point is equipped with track-

circuit automatic block signals, but the derailed tender was wholly off the rails, and, as the track had not been broken by the first derailment, the automatic signal continued to indicate safety. The freight train had been following the light engine at an interval of about twenty minutes.

Derailement No. 12 was due to a fault in a wheel of the tender of the leading engine of a "double-header" freight train, and the damage as reported (\$10,054) includes \$10,000 as the estimated damage to the rails in the track by the pounding of the broken wheel before the train was brought to a stop. The train was running about 20 miles an hour when a piece was broken out of the tread of the wheel, leaving a flat spot, so that it pounded and marked the rails at every revolution, and these violent shocks were sufficient in many cases to cause the rails to crack; and about 800 tons of rails were used to replace those which were found broken or defective, the train having run a considerable distance before the tender jumped the track. The damage to the engine and to the track at the point of derailment was slight. The engineman is held at fault for the damage, because his attention had been called to the noisy pounding of the wheel in ample time to prevent damage, but he continued with unabated speed. This was a cast-iron wheel 33 inches in diameter, made June 20, 1906. The estimated weight of the tender resting on the truck in which this wheel broke was 30 tons.

Derailement No. 9, in which an eastbound freight ran off a derailing switch at considerable speed and fouled the track of another railroad company, is reported as due wholly or mainly to the mistake of an engineman concerning a red light. The derailment occurred about 5 a. m., when there was a dense fog, and the engineman failed to stop the train before passing the signal which guarded the approach to the crossing of the other road, because, on sighting the red light of the stop signal, he assumed that the light was one used by an electric railroad company at a point about one mile back. The engineman had passed the electric crossing without being aware of it, the light at that point being at that time extinguished. This light of the electric road is used by the men in charge of cars on that road when such cars have to cross the track of the steam railroad. Since this accident this light has been made white instead of red. The engineman who thus mistook the location of signals had not worked long on this line. He had made six round trips over the line between December 14 and the date of the accident (February 22), five of them being made eastward at night. He had also worked on a yard engine in this region for eleven days in 1907.

Collision No. 4, between a westbound freight train and an eastbound passenger train, occurred about 4 o'clock in the morning and was due to the mistake of the engineman of the freight in reading an order and to the neglect of the conductor of the freight. The order,

which was on Form 19, stated that the passenger train would wait at Y until 4:35 a. m. for the freight, but the freight engineman, in some way unexplained, got the impression that the passenger train would wait at Z, which was 6 miles farther on. The order had been delivered to the freight train (one copy to the engineman and one to the conductor) at L while the train passed without stopping, so that the conductor and the engineman had not read it in each other's presence. The engineman had neglected to show the order to the fireman, as the rule requires. The conductor was asleep when the train approached and passed Y and therefore took no measures to bring the train to a stop; and he had neglected to show the order to the rear brakeman, as the rule requires.

Collision No. 11, between a northbound and a southbound freight train, was due to the failure of a station telegrapher to deliver a meeting order. The northbound train was running from A to B, C, D, etc., and the meeting point was to be at C. The order for the northbound train was sent to the telegrapher at C, but in some manner he allowed it to be hidden from view by other papers on his desk, and he gave the train a signal that he had no orders for it. The report says that the dispatcher is censured because he might just as well have sent the order to B or to A. Where a meeting order is so sent that it must be delivered to one or both of the trains at the station which is appointed for the meeting, the rule requires special precautions. The telegrapher must display a red flag (or light) in addition to the regular train-order signal, and he must put torpedoes on the track. In this case these precautions were not taken, and the dispatcher is censured for not having required the operator to take them. The operator is held at fault for this and also for not keeping the order properly before him, and for failing to use a special lock on the train-order lever in his office, as is required of operators when they have an order for an approaching train. Both dispatcher and operator have had several years' experience and had been on duty only a few hours.

Collision No. 15 was due to the failure of men in charge of a northbound freight train, while standing on a side track, to identify southbound passenger trains. The freight arrived at P about 4 a. m. to wait for three southbound passenger trains. The first of these passenger trains was behind time and the second and third preceded it. The freight started north immediately after the passage of the third passenger train, the train which should have been first being still due. It is the opinion of the investigating officers that all of the men on the freight train had been asleep while waiting on the side track (their train having been held there about two hours), and that they assumed that all three of the passenger trains had passed. It was this late passenger train with which the freight a few minutes after leaving P collided. The men in charge of the freight declare

that they had not been asleep. They had been on duty eleven hours and nineteen minutes and off duty before beginning that tour twenty-nine hours and thirty minutes.

TABLE NO. 3.—*Causes of accidents to employees in coupling and uncoupling cars.*

Subclass.	Causes.	Train-men.		Train-men in yards.		Yard train-men (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		17		12		30		4
2	Adjusting coupler, cars accidentally started.....	2	6		1	3	14	1	2
3	Careless manipulation of uncoupling lever.....		5		2		11		1
4	Cars not equipped with automatic coupler.....						1		2
5	Coupler broken, using link and pin or chain.....		3	2	1		3		1
6	Coupling damaged cars.....	1	10		5	1	21		4
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		5		2	1	21		
8	Coupling with chain or other emergency appliance because of uneven track.....				1				
9	Coupling or uncoupling safety chains.....		1		1		7		2
10	Fingers or hand caught between uncoupling lever and body of car.....		43		26		57		5
11	Uncoupling without using lever (unnecessary).....	1	7	2	6		17		
12	Uncoupling without using lever, uncoupling lever not in working order.....		25		13	2	46		
13	Foot caught in frog, switch, or guard rail.....		7				4		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	1	13		9	1	26	1	1
15	Opening knuckle when cars were near together, engine accidentally started.....	2	4	1	2		5		3
16	Opening knuckle, part of defective coupler fell on foot.....		6		4		8		
17	Opening knuckle, lost footing.....		7		1	2	12	1	2
18	Riding on car to uncouple, slipped off.....	3	5	2	3	2	10		
19	Struck by object at side of track.....		3		3		12		1
20	Caught by unexpected movement of car, due to slack running in.....	3	19		14		24		1
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	1	1		4	1	6		
22	Uncoupling moving cars and lost footing.....	2	17	2	8	4	29		3
23	Parts hard to move, causing delay.....		6		1		1		
24	Went between cars unnecessarily and contrary to rule.....	1	7		9	3	11		2
25	Hand caught between projecting load and end of next car.....		2				4		1
26	No witness (fatal injury).....	3				4			
27	Other causes.....	1	6		2		16		2
28	Unexplained.....		3		3		15		5
	Total.....	21	228	9	133	24	411	3	41

Details of injuries included in Table 3, subclass 27.

- J. 1. Reaching for lever and ran nail into hand.
- J. 2. Stepped in hole between tracks.
- J. 3. Hot flue dust came out of car.
- J. 4. Apron of car fell.
- J. 5. Stepped in manhole.
- J. 6. Stepped in hole at edge of track.
- J. 7. Knuckle broke and piece struck knee.
- J. 8. Stepped too close to track; struck by footboard of engine.
- F. 1. Caught hand under coupling pin.
- F. 2. Finger caught in coupler.
- F. 3. Struck by car.
- F. 4. Foot caught under wheel.
- F. 5. Stepped on piece of casting.
- F. 6. Holding lever with one hand and chocking car with other; caught finger.
- F. 7. Lump of coal rolled off tank, striking man on head.
- F. 8. Lock pin dropped on finger.
- M. 1. Pulling out tumbler of coupler and caught finger.
- M. 2. Drawhead broke and fell and caught leg.
- M. 3. Struck by corner of car.
- M. 4. Had hand resting on bumper and had fingers mashed when cars came together.
- M. 5. Fingers caught between bumpers.
- M. 6. Stepped on lump of coal.
- M. 7. Piece of casting fell off top of car.
- M. 8. Shaker bar fell off tank; toes mashed.
- M. 9. Apron of ballast car fell.
- M. 10. Lump of coal fell from tank, injuring hand.
- M. 11. Lump of coal fell from car on foot.

TABLE NO. 3A.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Trainmen.	Trainmen in yards.	Yard trainmen.	Other employees.
Loss of feet.....	3	4	5	.....
Loss of legs.....	2	.....	3	1
Loss of arms.....	3	1	2	.....
Loss of hands.....	2	1	2	.....
Loss of fingers.....	10	4	8	1
Loss of toes.....	2	1	1	.....
Fractured skull.....	2	.....	1	1
Fractured leg.....	2	.....	3	.....
Fractured arm.....	3	3	6	.....
Fractured collar bone or ribs.....	4	5	6	2
Fractured other bones.....	7	2	11	.....
Contusion of head or body.....	24	17	82	6
Contusion or laceration of feet.....	15	10	36	3
Contusion or laceration of toes.....	5	3	6	1
Contusion or laceration of legs.....	13	11	26	6
Contusion or laceration of arms.....	7	3	16	1
Contusion or laceration of hands.....	22	21	41	5
Contusion or laceration of fingers.....	76	38	122	11
Dislocation.....	1	1	2	.....
Internal injuries.....	5	2	3	.....
Sprains.....	13	5	23	2
Miscellaneous.....	7	1	6	1
Total injuries.....	228	133	411	41
Killed.....	21	9	24	3
Total killed and injured.....	249	142	435	44

RECAPITULATION.

Total killed.....	57
Total injured.....	813
Total killed and injured.....	870

TABLE NO. 4.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Sub-class.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	.....	8	.....	1	.....	6	.....	1
	2 Ice or snow.....	1	16	.....	9	.....	27	.....	1
	3 Parting of train.....	.....	15	.....	2	.....	10	.....	1
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.	2	58	4	20	5	97	.....	8
	5 While setting brakes.....	4	53	2	35	1	80	1	2
	Fell from—								
	6 Coal car.....	1	8	.....	5	1	7	1	4
	7 Freight car other than box or coal car.....	2	52	.....	13	2	23	7	19
	8 Engine or tender.....	6	161	3	75	5	65	3	26
	9 Passenger car.....	1	11	.....	1	.....	3	.....	4
	10 Engines, tenders, or cars (all kinds) not in motion.	2	113	1	51	.....	45	1	62
C7	11 Miscellaneous causes.....	3	250	2	44	3	319	.....	89
	12 Not clearly explained.....	13	67	5	18	6	67	3	31
	13 Slipped getting on moving trains or cars.....	8	133	2	59	5	97	5	40
	14 Jumping off moving trains.....	3	171	.....	89	1	135	3	50
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	3	56	.....	10	.....	22	.....	3
	16 Fell from engines or cars by reason of defective hand-holds and sill steps.....	.....	41	.....	16	.....	50	.....	1
	17 Getting on or off moving engine.....	4	219	5	146	2	196	6	42
	18 Caught in frog, guard rail, or switch.....	.....	2	.....	1	.....	3	.....	.....
	Total.....	53	1,434	24	595	31	1,252	30	284

ACCIDENTS ON ELECTRIC RAILWAYS.

TABLE NO. 1E.—Casualties to persons—January, February, and March, 1910.

Causes.	Passen- gers (a and b).		Persons carried under agree- ment or con- tract (bb).		Total (a, b, and bb).		Train- men.		Train- men in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	....	279	1	2	1	281	3	21	....	....
Derailments.....	1	37	....	....	1	37	....	4	....	....
Miscellaneous train accidents.....	....	1	....	....	....	1	....	....	....	....
Total train accidents.....	1	317	1	2	2	319	3	25	....	....
Coupling or uncoupling.....	....	....	....	....	....	....	....	2	....	2
While doing other work about trains or while attending switches.....	....	....	....	....	....	....	2	13	....	....
Falling from vehicles or while getting on or off.....	4	195	....	....	4	195	1	3	....	....
Other causes.....	4	51	....	....	4	51	1	1	....	....
Total (other than train accidents).....	8	246	....	....	8	246	4	19	....	2
Total, all classes.....	9	563	1	2	10	565	7	44	....	2

Causes.	Yard trainmen (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	6	....	3	3	30	4	311
Derailments.....	4	1	41
Miscellaneous train accidents.....	1
Total train accidents.....	6	....	3	3	34	5	353
Coupling or uncoupling.....	1	....	2	....	7	....	7
While doing other work about trains or while attending switches.....	2	....	6	2	21	2	21
Coming in contact with overhead bridges, structures at side of track, etc.....	1	....	1	....	1
Falling from vehicles or while getting on or off.....	7	....	2	1	12	5	207
Other causes.....	2	28	3	29	7	80
Total (other than train accidents).....	10	2	39	6	70	14	316
Total, all classes.....	16	2	42	9	104	19	669

TABLE NO. 2E.—*Collisions and derailments.*

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	12	\$4,145	1	72
Collisions, butting.....	9	18,300	2	59
Collisions, trains separating.....	1	200	.....	.....
Collisions, miscellaneous.....	13	12,155	1	180
Total.....	35	34,800	4	311
Derailments due to defects of roadway, etc.....	3	12	.....	5
Derailments due to defects of equipment.....	3	250	.....	7
Derailments due to negligence of trainmen, signalmen, etc.....	.....	.....	.....	.....
Derailments due to unforeseen obstruction of track, etc.....	4	450	.....	10
Derailments due to malicious obstruction of track, etc.....	.....	.....	.....	.....
Derailments due to miscellaneous causes.....	7	1,575	1	19
Total.....	17	2,287	1	41
Total collisions and derailments.....	52	37,087	5	352

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof, and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor and, upon conviction thereof by a court of competent jurisdiction, shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A), showing the cause in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter

^a For notes on Bulletins 1-16, see Bulletin No. 17; for notes on Bulletins 17-24, see Bulletin No. 30.

ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 25 shows 110 passengers killed in train accidents, three collisions and one derailment being responsible for 80 deaths in this class. The number of passengers killed from other causes (mostly their own negligence) also shows a large increase. One of the most serious collisions was due to the misreading of a dispatcher's order, and another to a mistake in sending or receiving the order.

Bulletin No. 26 shows a marked decrease in casualties as compared with preceding quarters, a large falling off in railroad traffic having taken place. The list of "prominent" train accidents includes only three cases which may be classed as notable.

Bulletin No. 27 shows further marked decreases in casualties incident to the large falling off in railroad traffic. The number of passengers and employees killed in train accidents (125) is the smallest since the monthly records were established. The most fatal accident in this quarter was a collision at a street crossing, where 8 passengers in an electric car were killed.

Bulletin No. 28 recorded the smallest number of passengers killed in train accidents (13) ever reported in the quarterly records. The total of passengers and employees killed in train accidents (112) was 13 less than the previous low record (125, Bulletin 27). Of the 13 passengers killed in train accidents, 7 were victims of a butting collision on an electric railroad.

Bulletin No. 29 showed totals far smaller than the corresponding quarter one year previous, but the diminution in the number of casualties, which had continued during the year of depression, seemed to have been checked. The number of passengers killed in train accidents was 53, and there were 8 notable collisions.

Bulletin No. 30 recorded 34 passengers killed in train accidents (including 15 victims of a forest fire). One collision resulted in 8 deaths of passengers, and two derailments killed 16 employees.

Bulletin No. 31, in part, continues the favorable showing of the quarter one year previous (Bulletin 27), though it covers a period of considerable revival of business. One collision caused 20 deaths and 28 injuries.

Bulletin No. 32 shows a total of 99 passengers and employees killed in train accidents—the lowest quarterly record thus far shown. It is to be observed, however, that a butting collision, causing the death of 9 passengers and 1 employee, occurring on an electric road, was not included, the railroad company having failed to make a report of the accident as required by law. The quarter in 1908 with which this one is most naturally compared (Bulletin 28) had one collision on an electric line in which 7 persons were killed.

Bulletin No. 33 shows considerable increases in most of the casualty items, marking the expansion of traffic on all of the principal railroads. Five accidents—4 collisions and 1 derailment—caused 47 deaths.

Bulletin No. 34 shows heavy totals in the casualty lists incident to the great expansion in railroad traffic accompanying the general revival in business. There was no very notable passenger-train accident, but a collision between a work train and a freight killed 14 laborers. The list of causes of prominent collisions is unusually varied.



ACCIDENT BULLETIN NO. 36

Collisions and Derailments of Trains and Casualties to Persons

on the Railroads of the United States

during the months of

April, May, and June, 1910

with

Tables for the year ending June 30, 1910

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



WASHINGTON
GOVERNMENT PRINTING OFFICE
1910

THE INTERSTATE COMMERCE COMMISSION.

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EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS

IN THE UNITED STATES DURING THE THREE MONTHS ENDING JUNE 30, 1910.

The number of persons killed in train accidents during the months of April, May, and June, 1910, as shown in reports made by the railroad companies to the Interstate Commerce Commission under the "accident law" of March 3, 1901, was 137, and of injured, 2,641. Accidents of other kinds, including those sustained by employees while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 20,650 (766 killed and 19,884 injured). Accidents to employees resulting in slight injuries, which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the ten days immediately following the accident, are not reported. These reports deal only with employees on duty, and passengers. The casualties to passengers have been divided into three classes. Class *a* includes all ordinary passengers. Class *b* includes passengers traveling on freight trains. Class *bb* includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight. The reported casualties are classified in Table No. 1, given below.

The statistics here given present the record of the standard railroads, for convenience called "steam roads," in distinction from electric railways. The accident statistics of those electric lines on which interstate traffic is carried, and which, therefore, are subject to the federal accident law, are given in a second table, No. 1E, and in Table No. 2E.

TABLE No. 1.—*Casualties to persons—April, May, and June, 1910.*

Causes.	Passengers (a and b).		Persons carried under agree- ment or contract (bb).		Total (a, b, and bb).		Trainmen.		Train- men in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	5	451	...	91	5	542	30	334	11	104
Derailments.....	2	560	5	100	7	660	36	295	4	30
Miscellaneous train accidents, including locomotive-boiler explosions.....		14	....	3	....	17	12	276	1	32
Total train accidents.....	7	1,025	5	194	12	1,219	78	905	16	186
Coupling or uncoupling.....							15	217	6	118
While doing other work about trains or while attending switches.....							15	2,276	3	606
Coming in contact with overhead bridges, structures at side of track, etc.....		2	....	1	....	3	7	173	5	53
Falling from cars or engines or while getting on or off.....	23	585	4	22	27	607	63	1,180	17	501
Other causes.....	13	710	3	123	16	833	43	213	21	100
Total (other than train accidents).....	36	1,297	7	146	43	1,443	143	4,059	52	1,438
Total all classes.....	43	2,322	12	340	55	2,662	221	4,964	68	1,624

Causes.	Yard trainmen (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	8	99	8	84	57	621	62	1,163
Derailments.....	2	38	12	59	54	422	61	1,082
Miscellaneous train accidents, including locomotive-boiler explosions.....	1	30	....	21	14	379	14	396
Total train accidents.....	11	167	20	164	125	1,422	137	2,641
Coupling or uncoupling.....	23	341	1	19	45	695	45	695
While doing other work about trains or while attending switches.....	8	799	15	548	41	4,289	41	4,289
Coming in contact with overhead bridges, structures at side of track, etc.....	3	95	2	18	17	339	17	342
Falling from cars or engines or while getting on or off.....	35	908	29	368	144	2,957	171	3,564
Other causes.....	21	133	254	7,074	339	7,520	355	8,353
Total (other than train accidents).....	90	2,276	301	8,027	586	15,800	629	17,243
Total all classes.....	101	2,443	321	8,191	711	17,222	766	19,884

In the quarter ending with June, the lists of killed and injured in collisions and derailments nearly always show decidedly smaller totals than in any other part of the year, because, apparently, of a combination of a moderate volume of traffic with favorable weather conditions. The quarter now reported is no exception to this rule, as will be seen by the comparison, in the table below, between this quarter (Bulletin No. 36) and that ending March 31 (Bulletin No. 35). At the same time, it will be observed that the comparison with the

April-June quarter of 1909 (Bulletin 32) shows considerable increases in every item. The explanation of this, so far as any explanation is available, is to be found in the general expansion of railroad traffic. The importance of giving particular attention to the causes of collisions and derailments is well shown by a comparison of the first item in Table 1A with the item below it. By subtracting item 1 from item 2, it will be seen that the numbers of passengers killed from causes other than train accidents—which means largely from their own fault—are not markedly variable—43, 45, 37; while in the first item—12, 110, 7—the fluctuations are violent; indicating that the measures which have been taken by the railroads to prevent passengers from injuring themselves have been much more successful than those which have been taken to prevent the wrecking of trains.

TABLE NO. 1A.—Comparisons of principal items with last quarterly bulletin and with one year back.

	Bulletin 36.	Bulletin 35.	Bulletin 32.
1. Passengers killed in train accidents.....	12	110	7
2. Passengers killed, all causes.....	55	155	44
3. Employees killed in train accidents.....	125	242	92
4. Employees killed in coupling.....	45	57	34
5. Employees killed, all causes.....	711	945	544
6. Total passengers and employees killed, all causes.....	723	1,100	588

The total number of collisions and derailments in the quarter now under review was 2,609 (1,225 collisions and 1,384 derailments), of which 142 collisions and 135 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,124,506. Given more in detail, these facts appear as below (collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported):

TABLE NO. 2.—Collisions and derailments.

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	206	\$231,825	17	238
Collisions, butting.....	114	256,848	24	419
Collisions, train separating.....	96	34,437	.....	65
Collisions, miscellaneous.....	809	341,491	21	441
Total.....	1,225	864,601	62	1,163
Derailments due to defects of roadway, etc.....	220	162,796	2	288
Derailments due to defect of equipment.....	663	567,296	8	146
Derailments due to negligence of trainmen, signalmen, etc.....	95	70,015	15	87
Derailments due to unforeseen obstruction of track, etc.....	55	82,946	7	112
Derailments due to malicious obstruction of track, etc.....	18	70,770	9	71
Derailments due to miscellaneous causes.....	333	306,082	20	378
Total.....	1,384	1,259,905	61	1,082
Total collisions and derailments.....	2,609	2,124,506	123	2,245
Total for same quarter of 1909.....	2,100	1,703,642	91	1,842
1908.....	2,130	1,617,398	104	2,008
1907.....	3,777	3,232,673	227	3,685

Following is the usual list of Class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest.

TABLE NO. 2A.—*Causes of 35 prominent train accidents.*

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
1	R	P and F.....	1	1	\$1,364	54	Freight ran into rear of passenger train which had been derailed at a washout. Crew of passenger train all injured in derailment, and a passenger, who went back to signal the freight, was unable to do so. He had a fusee, but rain was falling and he was unable to light the fusee. He had no lantern. This derailment is noted in the table below, item No. 3.
2	B	F and F.....	0	2	2,100	32	Collision at end of double track, due to a false light in the switch. The lamp man had put the lamp on the switch stand in the wrong position. The station operator is held at fault for not discovering the lamp man's error.
3	B	P and F.....	2	7	2,300	56	Dispatcher sent eastbound train over westbound track without first clearing the track of other trains. (See note in text below.)
4	R	P and F.....	0	15	2,400	28	Passenger train (9 p. m.) ran into rear of wrecking train; engineman of passenger acted on a block signal which was cleared for the wrecking train. The signalman was held at fault for not promptly putting the signal in the stop position after the passage of the front end of the wrecking train. The passenger engineman was also at fault for running too fast within yard limits.
5	B	F and F.....	0	2	3,634	57	Eastbound freight (2:40 a. m.) approached coaling station not under control; engineman, conductor, and front brakeman asleep.
6	B	P and F.....	0	43	3,745	2	Operator failed to deliver order. Conductor and engineman also at fault for not reporting at office for orders.
7	B	F and F.....	0	3	6,165	9	Conductor and engineman of northbound disregarded a dispatcher's order on the assumption that it would be impossible for the southbound train to travel at a certain speed; also the dispatcher annulled a "wait order" without notifying the train for whose benefit it had been made. (5 a. m.)
8	R	F and F.....	1	23	6,775	4	Careless running after passing automatic block signal at "stop."
9	B	F and F.....	1	3	7,000	59	Engineman of northbound light engine ran past meeting point. (See note in text below.)
10	B	F and F.....	1	0	7,500	7	Extra train northbound (2:30 a. m.) encroached on time of southbound; should have stopped at a blind siding; men claim to have lost their bearings. The superintendent says it would have been easy to locate the siding.
11	B	F. and F.....	0	6	9,500	34	Failure of operator to deliver order. He accepted order to be delivered to conductor whose train was on siding, having told dispatcher that the conductor was held, but the train started while the operator was busy and he was unable to deliver the order, though he tried to do so. (10 p. m.) Age of operator 21 years; in the service 4 months as station helper and 7 months as operator.
12	B	F. and F.....	0	6	10,047	37	Dispatcher (11:43 a. m.) sent order to train No. 30 to run 20 minutes late. The succeeding dispatcher (12:06 p. m.) sent this order to an opposing train and made the time 30 minutes instead of 20; this train used 10 minutes too much of the time of train No. 30, and this caused the collision.

TABLE NO. 2A.—Causes of 35 prominent train accidents—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
13	B	P. and P.....	0	34	\$12,500	11	Mistake in observing lights of fixed signals at meeting point. (See note below.)
14	B	F. and F.....	0	2	13,600	33	Nondelivery of orders. (See note below.)
15	B	F. and F.....	1	2	13,978	8	Extra freight approached station not under control. (10:50 p. m.)
16	R	P. and F.....	1	5	15,200	1	Freight followed passenger train from passing track too closely, disregarding prescribed 5-minute time interval and running at excessive speed. Passenger train ahead had slackened speed because of a cow on track. Freight ran into rear of passenger train.
17	R	F. and F.....	0	0	16,975	29	Double-header freight train not kept under control on descending grade; misunderstanding between enginemen as to which should manage the air brakes.
18	B	F. and F.....	2	5	17,850	6	Eastbound train disregarded order to reach B by 2:30 a. m. (See note in text below.)
a19	B	P. and F.....	2	2	30,000	38e2	Southbound ran past meeting point. (See note in text below.)
a20	B	P. and F.....	3	1	10,000	38e3	Trailer broke away and ran back down grade. (See note in text below.)
Total collisions.....			15	163	192,633	.....

DERAILMENTS.

1	D	P.....	0	10	\$2,055	24	Switch (at electro-pneumatic interlocking) thrown under moving train. Leverman carelessly moved the switch lever too soon, and the detector bar broke, allowing the switch rails to be moved.
2	D	F.....	3	6	2,825	23	Misplaced switch. (See note in text below.)
3	D	P.....	0	43	3,140	65	Washout (7:50 p. m.) due to 36-inch pipe culvert becoming clogged with driftwood during an unprecedented rainfall. This derailment was followed by a collision. (See coll'n No. 1 above.)
4	D	P.....	1	1	3,500	63	Excessive speed on curve due to false clear signal at interlocking, where a switch was undergoing repairs. Signalman and signal repairman held responsible for display of wrong signal.
5	D	P.....	0	24	4,700	43	Track being repaired; a flagman of three months' experience sent out to warn all trains; omitted to stop an extra passenger train, assuming that, in accordance with custom, the track foreman would have the track in safe condition for a passenger train; that his function was to stop freight trains only. The engineman of the passenger train is held at fault for not obeying the speed-limit rule in force at this place. The passenger was an extra.
6	D	F.....	0	0	5,850	64	Excessive speed due to error of judgment of engineman in handling air brakes on a descending grade of 110 feet to mile; ran off derailing switch.
7	D	P.....	0	28	6,000	41	Defective joint; wreck took fire from stove in baggage car; fire spread by gas which escaped from broken pipes.
8	D	P.....	0	31	6,130	42	Track not in good surface. Speed 45 miles an hour. Tender the first vehicle to jump the track.
9	D	F.....	2	1	9,819	50	Misplaced switch. Agent had neglected to put on lamp as night approached; the crew of the preceding train neglected to report absence of the lamp. The superintendent also holds that in view of the absence of the lamp, the engineman should have slackened speed more than he did.
10	D	F.....	0	1	9,872	13	Broken rail; fresh break, no fault in manufacture. Wreck took fire from the fire box; oil from the ruptured tender flowed around the fire box, spreading the flames.
11	D	P.....	0	29	17,100	49	Loose engine wheel; speed 40 miles an hour.
12	D	F.....	0	0	32,100	66	Long pieces of structural iron on platform car were not sufficiently braced and the load, shifting on its bearings while the train was passing through a bridge, struck the truss and the bridge (160 feet long) was knocked down; and several cars were wrecked.

a Collisions 19 and 20 occurred on electric roads and are included in Table 1E and 2E following.

TABLE NO. 2A.—Causes of 35 prominent train accidents—Continued.

DERAILMENTS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to en- gines, cars, and road- way.	Reference to record.	Cause.
13	D	F.....	1	2	\$35,800	39	Engineman ran past flagman, who warned him to stop on approaching a point where the track was being repaired. The engineman (who was killed) had been using intoxicating liquor. Rail joint in track maliciously loosened. Unbalanced load. (See note in text below.)
14	D	P.....	3	25	55,000	25	
15	D	F.....	0	0	3,000	26	
Total derailments....			10	201	196,891	.....
Total collisions and derailments.....			25	364	389,524	.....

Collision No. 3, between a westbound work train and an eastbound passenger train, was due to lack of care on the part of a dispatcher, a conductor, and a telegrapher. A work train had the right to use both main tracks between B and C. When it was time for an eastbound passenger train to leave B for C, the work train, in order to clear the eastbound track, proceeded to C and from there went back westward on the westbound track. The operator at C omitted to report this movement of the work train to the dispatcher, and the dispatcher, believing the work train to be still on the eastbound track, ordered the passenger train to proceed from B to C on the other track. The flagman of the work train had stopped the passenger train, but had not informed its conductor that the work train had gone to C for the purpose of crossing over to the westbound track, being himself ignorant of this movement. The work train, moving westward, and the passenger train, moving eastward, collided 5 miles east of B. The dispatcher is held blameworthy for not seeing that the westbound track was clear before he allowed any eastbound train to move over it, and the conductor of the work train is blamed for not more fully and carefully instructing his flagman; and the telegrapher at C is blamed for not giving prompt notice to the dispatcher when the work train came to his station. This telegrapher at C had been in that position seven weeks. The other persons concerned were men of experience.

Collision No. 9, in which 1 person was killed and 3 were injured, was between an engine, without train, running north, and a freight train running south. The engineman in charge of the engine northbound, on reaching S, where he was to meet the southbound, according to an order which had been received from the dispatcher, received from the operator at S another copy of the same order, which had been sent to that station to make sure that neither train should go past that point. He did not read this order carefully, or at least not with sufficient care, and assumed that he had received a new

order authorizing him to go forward to the next station. He read the order (incorrectly) to the fireman, but the fireman did not read it for himself. When the engine started from the station, the operator assumed that it was the intention of the engineman to go forward a short distance and then set back into the side track and wait for the southbound train; and, because of this assumption, he took no measures to recall the engine.

Collision No. 13, injuring 34 persons, was due to a mistake in observing a signal at the end of a double track. Train No. 3, westbound, should have stopped before passing from the double track to the single track, to meet train No. 2, eastbound; but No. 3 approached at uncontrollable speed and ran about 75 feet beyond the switch. The eastbound train approached at the same moment, and in the resulting collision the mail car of the eastbound train was knocked off a bridge, falling 50 feet to the street below; and the baggage car, which was next behind the mail car, was lifted in such a way that it telescoped the passenger car next behind it. Most of the victims were in this passenger car. Train No. 3 approached the meeting point on a curve to the left and the fireman of the leading engine of this train (which was a helping engine), seeing the green light of the switch, which indicated that the switch was in position for the eastbound train, mistook it for the green light of the semaphore signal which would indicate all clear for the westbound train; he therefore called to the engineman that the road was clear.

As soon as the train had run far enough to enable the engineman to see the semaphore, he saw that the light was not green and applied the brakes, but not in season to prevent the collision. The fireman of the helping engine was 21 years old, and had been in the service of the road about eight months.

Collision No. 14 was due to the neglect of two telegraphers to deliver orders and to bad judgment on the part of an engineman. Westbound extra 9, running from M to A, B, C, D, E, F, etc., left M at 5:45 a. m.; A at 5:59, and arrived at B at 6:16 a. m. At B this train should have stopped short of the switches to keep out of the way of eastbound train 8, which was running on the westbound track from F to B. The operator at M had neglected to deliver to extra 9 the order authorizing this movement. He had fixed it in a hoop, expecting that the train would pass without stopping; but before the train arrived he had other duties to perform in connection with other trains, and while so engaged the conductor of train 9 came into his office and the operator told him that there were no orders. Shortly after he gave the train a clear block signal and the train proceeded. On arriving at B this train found the signals against it; but the engineman sounded the whistle signal calling for the block signal, and the operator gave him a proceed signal and delivered to

him a message telling him to move his train forward so as to clear the cross-over track for eastbound train No. 10. In this message he stated that the eastbound train had left E at 5:55 a. m., but that it could not reach B until after No. 10 was out of the way. He did not say that the eastbound train was on the westbound track, for he assumed that this information had already been given to the westbound train. According to the rules, however, he should have delivered to extra train 9 a copy of the order which was neglected at M. Although he had cleared the block signal to allow extra 9 to pass beyond his cross-over switches, he had not secured the block from D.

The engineman of train 9, a man of long experience, acknowledged that he did not understand the meaning of the message delivered to him by the operator at B, and he is held at fault for not stopping his train and securing an explanation. Having had no orders from the dispatcher, and having received a clear block signal, he proceeded from B westward and met the eastbound train near C. At the time of the collision each train was moving about 25 or 30 miles an hour. After extra train 9 left B the operator there informed the dispatcher, and it was then discovered that the order giving the eastbound train the right to the westbound track had not been delivered. The operator at B telephoned to the agent at C, who was at his house, and this agent tried to stop the eastbound train, but was a few seconds too late to do so. The operator at M was 23 years old and had been in the service three months. The operator at B was 22 years old and had been in the service two months. The dispatcher is charged with exercising poor judgment in arranging for the meeting of extra 9 and another westbound train at B with eastbound train No. 10 after having given eastbound train 8 the right to use the wrong track from F to B. This dispatcher is 27 years old and has been an operator about five and one-half years, but he had been employed as dispatcher only about four weeks.

Collision No. 18, occurring about 2 a. m., was due either to the fault of the eastbound train in failing to send forward a flagman when it was found impossible to reach B in season to clear the time of the westbound as given in a telegraphic order, or to carelessness on the part of the westbound train in passing B before the time, as fixed in the order, to which it was required to wait at that station. The conductor and the engineman of the eastbound train were both killed, and the stations at which the time was recorded are so far apart that it is impossible to check with satisfactory accuracy the statements as to the times of the two trains. A flagman of the eastbound train was making his first trip in the service of the company and had no watch. The surviving members of the crew of the eastbound train can give no satisfactory testimony. The preponderance of evidence seems to indicate that the eastbound train was at fault.

Collision No. 19, which occurred at about 3 a. m., and in which two persons were killed, was between a southbound electric car drawing two cars of freight and a northbound electric sleeping car. The wreck took fire from some cause not discovered, and its combustible portions were entirely burnt up. The two freight cars were loaded with whisky, which may have been ignited from one of the trainmen's lanterns. The passengers in the sleeping car, of whom there were five, escaped uninjured. The southbound car had orders to stop at L to meet the northbound, but it ran a short distance past the meeting point. The reason for this disregard of orders can not be determined, as it was the crew of this train—conductor and motorman—who were killed. The conductor had been in the service of the company two and one-half years and the motorman one year.

Collision No. 20 was due to the breakage of a coupling (Master Carbuilders's type). A "trailer" attached to an electric car ascending a steep grade broke away and ran back down the grade a short distance, when it collided violently with a following passenger car. Two passengers were killed. The electric car and the trailer were not equipped with continuous brakes and there was no man on the rear car; and the men on the leading car did not discover that the cars had parted for some little time after the breakage occurred.

Derailment No. 2, caused by a passenger train running at high speed into a turn-out because of a switch having been left misplaced, was due to a misunderstanding between a conductor and a telegraph operator (signalman), and also to misunderstanding and carelessness on the part of two operators.

A westbound freight train left S at about 5 a. m. The conductor, contrary to the regulations, requested the signalman at the station to close the switch after the train should have passed out of the side track. The conductor, after having got some distance away from the station, saw that the switch had not been closed, and so, on arriving at V, he requested the telegrapher there to communicate with S and make sure that his request had been complied with. The telegrapher at V, speaking to S, said "Did you close the —," when he was interrupted by S, who said "I certainly did." The telegrapher at V repeated to the conductor this partial question and the reply to it. This reply having been accepted as satisfactory, an eastbound passenger train was allowed to proceed from V to S, and, the switch having been left unchanged, this train ran into the side track and was derailed because of the sharpness of the curve, which was safe only for low speed. The foregoing statement as to the conversation over the wire is that which is given by the telegrapher at V. It is denied in many details by the signalman (telegrapher) at S. The man at S also disputes some of the statements of the conductor in

regard to what was said when, as reported by the conductor, the original request was made to close the switch.

The derailed engine was overturned and fell against two boarding cars on a sidetrack, killing two and injuring four workmen who were preparing breakfast in the cars.

The signalman at S was 19 years old and had been in the employ of the road eight months; and the signalman at V was 25 years old and had been in the service three years.

Derailment No. 15 was due to the shifting of a load of steel bridge girders. These girders, very long, covered the length of three open cars, and as the train entered a 6 degree curve at a speed of about 15 miles an hour, the load shifted to one side sufficiently to greatly lighten the load on the other side; and in consequence of this one of the wheels on the outside of the curve rode over the rail. The shifting of the girders was made possible by the breakage of one of the bolts which held them in place.

TABLE 3.—*Causes of accidents to employees in coupling and uncoupling cars.*

Subclass.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		22		13		41		2
2	Adjusting coupler, cars accidentally started.....	1	8		3	2	12		1
3	Careless manipulation of uncoupling lever.....		6		4		5		
4	Cars not equipped with automatic coupler.....		1				1		
5	Coupler broken, using link and pin or chain.....		2		1		2		
6	Coupling damaged cars.....		12		4	4	16		2
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....	1	1		2	1	10		1
8	Coupling with chain or other emergency appliance because of uneven track.....								
9	Coupling or uncoupling safety chains.....		2				7		
10	Fingers on hand caught between uncoupling lever and body of car.....		27		22		60		6
11	Uncoupling without using lever (unnecessary).....	1	10		4	2	20		1
12	Uncoupling without using lever, uncoupling lever not in working order.....		14		10	2	28		
13	Foot caught in frog, switch, or guard rail.....	2	1		2	4	2		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	1	24	1	10	1	17		
15	Opening knuckle when cars were near together, engine accidentally started.....		1		2		1		2
16	Opening knuckle, part of defective coupler fell on foot.....		4				4		
17	Opening knuckle, lost footing.....	2	6		5		7		
18	Riding on car to uncouple, slipped off.....	1	5	1		2	11	1	
19	Struck by object at side of track.....		5		5		7		1
20	Caught by unexpected movement of car, due to slack running in.....		22	1	7	2	18		
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	1	5		2		5		
22	Uncoupling moving cars and lost footing.....	2	6	2	8	1	10		
23	Parts hard to move, causing delay.....		6				4		
24	Went between cars unnecessarily and contrary to rule.....	2	10		6	2	18		1
25	Hand caught between projecting load and end of next car.....		3				2		
26	No witness (fatal injury).....	1		1					
27	Other causes.....		6		4		21		1
28	Unexplained.....		8		4		12		1
Total.....		15	217	6	118	23	341	1	19

Details of injuries included in Table 3, subclass 27.

- A. 1. Drawbar broke, catching hand.
- A. 2. Car door fell off, striking head.
- A. 3. Struck by lump of coal which fell from car.
- A. 4. Stepped on piece of glass.
- A. 5. Coat caught on bolt.
- A. 6. Opening knuckle and cut hand on sharp piece of iron.
- A. 7. Struck by piece of iron which fell from car.
- A. 8. Struck by air hose.
- A. 9. Stepped on a clinker and turned ankle.
- M. 1. Struck arm against end sill of car.
- M. 2. Glove caught on knuckle.
- M. 3. Foot caught under tender.
- M. 4. Leg caught between lever of car and tank of engine.
- M. 5. Stepped on a spike.
- M. 6. Placed foot on rail and car ran over toes.
- M. 7. Struck by apron of car which fell.
- J. 1. Struck by end gate which fell.
- J. 2. Struck on knee by lift lever.
- J. 3. Air was let into car, causing hose to fly up, injuring head.
- J. 4. Struck in side by lever.
- J. 5. Struck on foot by lump of coal from dump bucket.
- J. 6. Struck by lump of coal which fell from car.
- J. 7. Air hose flew up, cutting leg.
- J. 8. Struck by piece of wood which rolled off car.
- J. 9. Stepped on piece of glass.
- J. 10. Dump lever fell, bruising head.
- J. 11. Arm broken by drawhead falling out.
- J. 12. Torpedo exploded, cutting leg.
- J. 13. Brakeman shoved off balance by crowd of passengers. In attempting to catch himself, he placed his hand on cog of brake just as air was turned on, causing wheel to turn, injuring hand.
- J. 14. Struck by lump of coal which fell from car.
- J. 15. Struck by piece of steel which broke off coupler.
- J. 16. Burnt by hot metal which splashed out of ladle on car.

TABLE 3A.—Nature of injuries to employees in coupling and uncoupling cars.

Injuries.	Trainmen.	Trainmen in yards.	Yard trainmen.	Other employees.
Loss of feet.....	4	6	2	.....
Loss of legs.....	2	4	2	.....
Loss of arms.....	1	2	2	1
Loss of hands.....	.....	2	1	.....
Loss of fingers.....	9	4	8	3
Loss of toes.....	3	1	1	.....
Fractured leg.....	2	1	3	.....
Fractured arm.....	1	1	4	1
Fractured collar bone or ribs.....	7	.....	5	.....
Fractured other bones.....	7	.....	9	1
Contusion of head or body.....	25	10	53	2
Contusion or laceration of feet.....	17	11	44	2
Contusion or laceration of toes.....	6	1	8	.....
Contusion or laceration of legs.....	11	5	24	.....
Contusion or laceration of arms.....	13	5	14	1
Contusion or laceration of hands.....	33	17	43	2
Contusion or laceration of fingers.....	61	39	97	4
Dislocation.....	.....	2	1	1
Internal injuries.....	5	1	2	1
Sprains.....	7	3	9	.....
Miscellaneous.....	3	3	9	.....
Total injuries.....	217	118	341	19
Killed.....	15	6	23	1
Total killed and injured.....	232	124	364	20

RECAPITULATION.

Total killed.....	45
Total injured.....	695
Total killed and injured.....	740

TABLE 4.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.

Sub-class.	Causes.	Train-men.		Train-men in yards.		Yard-trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....		6		1		8		
	2 Ice or snow.....						1		
	3 Parting of train.....	1	10		3		7		2
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3..	2	56	1	33	3	80	2	17
	5 While setting brakes.....		41		25	6	57		1
	Fell from—								
	6 Coal car.....	2	2	1	4		2	1	3
	7 Freight car other than box or coal car.....	4	50	1	16	2	15	7	24
	8 Engine or tender.....	10	115	5	68	4	40	1	19
	9 Passenger car.....	3	3		3		7		1
C7	10 Engines, tenders, or cars (all kinds) not in motion.....		69		30		29	4	57
	11 Miscellaneous causes.....	5	222	1	51	9	248	2	73
	12 Not clearly explained.....	20	65	6	17	6	50	2	23
	13 Slipped getting on moving trains or cars.....	3	140		47	1	72	5	51
	14 Jumping off moving trains.....	5	166	1	81	3	116	4	54
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	1	43		9		6		3
	16 Fell from engines or cars by reason of defective hand-holds and sill steps.....		52		14		48		
	17 Getting on or off moving engine.....	7	140	1	99	1	127	1	40
	18 Caught in frog, guard rail, or switch.....								
	Total.....	63	1,180	17	501	35	908	29	368

ACCIDENTS ON ELECTRIC RAILWAYS.

TABLE NO. 1E.—Casualties to persons—April, May, and June, 1910.

Causes.	Passen-gers (a and b).		Persons carried under agree-ment or con-tract (bb).		Total (a, b, and bb).		Train-men.		Train-men in yards.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	2	259	1		3	259	5	13		1
Derailments.....		50		1		51		6		
Miscellaneous train accidents.....		2				2				
Total train accidents.....	2	311	1	1	3	312	5	19		1
Coupling or uncoupling.....								2		1
While doing other work about trains or while attending switches.....								14		
Coming in contact with overhead bridges, structures at side of track, etc.....		9				9	1	3		
Falling from vehicles or while getting on or off.....	4	275		1	4	276	1	11		
Other causes.....		52				52	2	2		
Total (other than train accidents).....	4	336		1	4	337	4	32		1
Total, all classes.....	6	347	1	2	7	649	9	51		2

TABLE No. 1E.—*Casualties to persons—April, May, and June, 1910—Continued.*

Causes.	Yard trainmen (switching crews).		Other employees.		Total employees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....				1	5	15	8	274
Derailments.....				2		8		59
Miscellaneous train accidents.....								2
Total train accidents.....				3	5	23	8	335
Coupling or uncoupling.....		4		1		8		8
While doing other work about trains or while attending switches.....		2	1	6	1	22	1	22
Coming in contact with overhead bridges, structures at side of track, etc.....		2		1	1	6	1	15
Falling from vehicles or while getting on or off.....		3		3	1	17	5	293
Other causes.....			2	28	4	30	4	82
Total (other than train accidents).....		11	3	39	7	83	11	420
Total, all classes.....		11	3	42	12	106	19	755

TABLE No. 2E.—*Collisions and derailments.*

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	15	\$5,839	1	62
Collisions, butting.....	11	47,502	7	202
Collisions, train separating.....				
Collisions, miscellaneous.....	7	846		10
Total.....	33	54,187	8	274
Derailments due to defects of roadway, etc.....	2			5
Derailments due to defects of equipment.....				
Derailments due to negligence of trainmen, signalmen, etc.....	2			15
Derailments due to unforeseen obstruction of track, etc.....	1	1,500		1
Derailments due to malicious obstruction of track, etc.....				
Derailments due to miscellaneous causes.....	11	3,860		38
Total.....	16	5,360		59
Total collisions and derailments.....	49	59,547	8	333

YEARLY TABLES.

This bulletin completes the publication of the accident records under the law of March 3, 1901, for nine years, and the large table following, Table A, gives the aggregates, for the year ending June 30, 1910, of the items which appear in Table No. 1 of the quarterly returns. The total number of casualties shown for the year in Table A is 86,178 (3,804 killed and 82,374 injured).

This table includes for 1910 the following statistics which did not appear in the quarterly bulletins, the reports from which they are taken having been received after the bulletins were printed. Two passengers and 11 employees killed and 57 passengers and 111 employees injured.

The totals of these yearly tables are not comparable with those given in the commission's annual statistical reports, for the reason that the monthly reports deal only with accidents to passengers and to employees while on duty. The monthly reports take no account of accidents to "other persons." These appear in the annual reports, and include casualties at highway crossings, to trespassers, to persons walking along the track, accidents to employees in shops remote from the railroad, and all other accidents not occurring to passengers and to employees actually on duty.

The salient facts of the records of casualties for the twelve months are shown in Table B, which is given for the purpose of making available a comparison with any year back to 1903.

The totals in Tables A and B for the year ending June 30, 1910, include the aggregate of the four quarterly bulletins; but bulletins 34, 35, and 36 (the last three) do not include accidents on electric railroads; so that to make comparison with preceding years the figures should be increased as follows:

	Passengers.		Employees.		Total.	
	K.	L.	K.	L.	K.	L.
Table A.....	421	13,756	3,383	68,618	3,804	82,374
Electric roads, Bulletins 34, 35, and 36.....	29	1,750	35	307	64	2,066
Total.....	450	15,515	3,418	68,925	3,868	84,440

TABLE A.—Summary of casualties to persons, year ending June 30, 1910.

	Passengers (a and b).		Persons car- ried under agreement or contract (bb).		Total (a, b, and b b).		Trainmen.		Trainmen in yards.		Yard train- men (switch- ing crews).		Other em- ployees.		Total em- ployees.		Total persons reported.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	57	3,898	21	530	78	4,428	216	1,765	45	637	44	468	50	443	355	3,333	433	7,761
Derailments.....	70	2,001	17	345	87	2,946	186	1,272	9	138	22	191	34	267	253	1,868	340	4,814
Miscellaneous train accidents, including loco- motive boiler explosions.....	52	122		20	52	142	75	1,086	7	232	3	139	22	133	107	1,590	159	1,732
Total train accidents.....	179	6,021	38	895	217	7,516	479	4,123	61	1,027	69	798	106	843	715	6,791	932	14,397
Coupling or uncoupling.....							60	927	40	520	99	1,426	7	112	206	2,965	206	2,965
While doing other work about trains or while attending switches.....							61	9,206	23	3,050	42	3,608	41	2,286	157	18,240	157	18,240
Coming in contact with overhead bridges, structures at side of track, etc.....	2	27	1	6	3	33	57	644	19	241	15	424	5	68	96	1,377	99	1,410
Falling from cars or engines or while getting on or off.....	127	2,746	10	85	137	2,833	231	5,271	80	2,305	138	4,081	137	1,558	536	13,196	723	16,029
Other causes.....	54	3,010	10	364	64	3,374	178	691	102	512	111	551	1,282	24,075	1,623	26,029	1,687	29,408
Total (other than train accidents).....	183	5,785	21	455	204	6,240	577	17,029	264	6,629	405	10,670	1,422	28,099	2,668	61,827	2,672	68,067
Total (all classes).....	362	12,406	59	1,350	421	13,756	1,056	21,152	325	7,656	474	10,868	1,528	28,942	3,383	68,618	3,804	82,374

TOTALS FOR PRECEDING YEAR.

Collisions.....	72	2,716	22	317	94	3,033	145	1,266	39	467	20	284	44	345	246	2,362	342	5,365
Derailments.....	30	2,450	7	267	37	2,717	171	906	11	128	14	125	31	199	227	1,448	264	4,165
Miscellaneous train accidents, including loco- motive boiler explosions.....		96		19		115	36	727	4	177	2	94	3	69	45	1,067	45	1,132
Total train accidents.....	102	5,262	29	603	131	5,865	352	2,999	54	772	36	503	78	613	520	4,877	651	10,742
or while bridges, getting							40	735	36	463	67	1,086	9	69	161	2,353	161	2,353
on or off.....	2	32		4	2	36	54	601	9	243	7	334	6	51	76	1,229	76	1,265
Other causes.....	129	2,991	8	85	137	3,076	196	3,947	74	1,994	107	2,960	104	1,368	481	10,259	618	13,336
Total (other than train accidents).....	52	2,820	13	319	65	3,139	110	817	74	384	86	379	855	17,191	1,125	18,771	1,190	21,910
Total (all classes).....	183	5,843	21	408	204	6,251	437	13,247	216	5,430	277	7,359	1,008	20,891	1,936	46,927	2,140	53,178
	286	11,105	50	1,011	335	12,116	789	16,236	270	6,262	313	7,862	1,084	21,504	2,456	51,804	2,791	63,920

TABLE B.—*Casualties to passengers and employees, years ending June 30.*

	1910.		1909.		1908.		1907.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers:								
In train accidents.....	217	7,516	131	5,865	165	7,430	410	9,070
Other causes.....	204	6,240	204	6,251	241	5,215	237	4,527
Total.....	421	13,756	335	12,116	406	12,645	647	13,597
Employees:								
In train accidents.....	715	6,791	520	4,877	642	6,818	1,011	8,924
In coupling accidents.....	208	2,985	161	2,353	239	3,121	302	3,928
Overhead obstructions, etc.....	96	1,377	76	1,229	110	1,353	134	1,591
Falling from cars, etc.....	586	13,196	481	10,259	668	11,735	790	12,565
Other causes.....	1,780	44,269	1,218	33,086	1,699	33,317	2,116	35,661
Total.....	3,383	68,618	2,456	51,804	3,358	56,344	4,353	62,629
Total passengers and employees.....	3,804	82,374	2,791	63,920	3,764	68,989	5,000	76,226

	1906.		1905.		1904.		1903.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers:								
In train accidents.....	182	6,778	350	6,498	270	4,945	164	4,424
Other causes.....	236	4,407	187	3,542	150	3,132	157	2,549
Total.....	418	11,185	537	10,040	420	8,077	321	6,973
Employees:								
In train accidents.....	879	7,483	798	7,052	844	6,990	895	6,440
In coupling accidents.....	311	3,503	243	3,110	278	3,441	253	2,788
Overhead obstructions, etc.....	132	1,497	92	1,185	116	1,210	93	992
Falling from cars, etc.....	713	11,253	633	9,237	700	9,371	678	8,025
Other causes.....	1,772	31,788	1,495	24,842	1,429	22,254	1,314	20,759
Total.....	3,807	55,524	3,261	45,426	3,367	43,266	3,233	39,004
Total passengers and employees.....	4,225	66,709	3,798	55,466	3,787	51,343	3,554	45,977

Table C, on the next page, shows the totals of the two principal classes of train accidents for six years past. This table includes, for 1910, the following statistics which did not appear in the quarterly bulletins, the reports from which they are taken having been received after the bulletins were printed: Twenty-two collisions; damage, \$12,103; killed, 5; injured, 24. Twenty-eight derailments; damage, \$29,952; killed, 1; injured, 23.

TABLE C.—Collisions and derailments; damage to cars, engines, and roadway, years ending June 30.

	1910.						1909.					
	Num- ber.	Loss.	Killed.	Injured.	Num- ber.	Loss.	Killed.	Injured.	Num- ber.	Loss.	Killed.	Injured.
Collisions, rear.....	1,311	\$1,308,763	119	2,324	859	\$933,375	83	1,566	1,397	\$1,206,044	83	1,742
Collisions, butting.....	695	1,514,381	194	3,008	485	574,729	159	1,878	793	1,473,618	210	3,143
Collisions, train separating.....	418	184,883	5	197	396	146,067	6	159	436	106,950	4	214
Collisions, miscellaneous.....	3,437	1,551,252	115	2,236	2,681	1,154,520	94	1,802	3,735	1,607,687	112	2,613
Total.....	5,861	4,629,279	433	7,765	4,411	3,108,691	342	5,395	6,363	4,635,199	414	7,712
Derailments due to defects of roadway, etc.....	1,115	914,642	42	1,337	991	708,658	25	1,195	1,426	1,088,261	46	1,896
Derailments due to defects of equipment.....	2,734	2,227,352	40	636	2,362	1,875,646	28	631	2,796	2,176,194	37	831
Derailments due to negligence of trainmen, signalmen, etc.....	377	238,843	23	311	307	196,768	25	329	406	273,038	31	376
Derailments due to unforeseen obstruction of track, etc.....	350	464,414	58	825	331	444,308	79	485	381	562,441	67	590
Derailments due to malicious obstruction of track, etc.....	66	165,185	18	227	51	93,037	21	195	90	144,903	24	215
Derailments due to miscellaneous causes.....	1,276	1,184,243	159	1,478	1,217	1,033,005	83	1,334	1,572	1,308,624	109	1,512
Total.....	5,918	5,194,679	340	4,814	5,259	4,371,512	261	4,141	5,671	5,548,461	314	5,122
Total collisions and derailments.....	11,779	9,823,958	733	12,579	9,670	7,480,203	603	9,536	13,034	10,183,660	728	12,834
	1907.						1906.					
	Num- ber.	Loss.	Killed.	Injured.	Num- ber.	Loss.	Killed.	Injured.	Num- ber.	Loss.	Killed.	Injured.
Collisions, rear.....	1,957	\$2,013,509	263	2,423	1,722	\$1,720,305	169	2,427	1,493	\$1,463,012	152	2,065
Collisions, butting.....	1,065	1,935,505	327	3,616	866	1,599,568	261	2,733	707	1,451,906	304	2,453
Collisions, train separating.....	685	259,486	13	323	901	359,156	9	375	972	440,496	11	309
Collisions, miscellaneous.....	4,309	2,101,059	203	3,180	3,705	1,640,669	175	2,379	3,062	1,463,641	141	2,204
Total.....	8,026	6,299,568	776	9,541	7,194	5,319,738	604	7,914	6,224	4,840,054	608	7,111
Derailments due to defects of roadway, etc.....	1,528	1,255,114	58	1,983	1,287	918,056	38	1,608	1,007	777,433	50	1,446
Derailments due to defects of equipment.....	3,178	2,490,028	59	928	2,811	2,226,153	42	902	2,605	2,068,620	40	798
Derailments due to negligence of trainmen, signalmen, etc.....	495	396,626	130	756	391	318,254	54	493	341	272,254	40	418
Derailments due to unforeseen obstruction of track, etc.....	387	556,725	68	658	300	472,633	76	458	332	676,001	177	646
Derailments due to malicious obstruction of track, etc.....	59	153,694	14	176	65	106,859	16	94	76	142,761	34	196
Derailments due to miscellaneous causes.....	1,785	1,713,947	186	2,106	1,407	1,297,843	147	1,318	1,010	925,533	115	1,334
Total.....	7,432	6,556,134	515	6,695	6,261	5,339,431	373	4,772	5,371	4,862,602	456	4,838
Total collisions and derailments.....	15,458	12,853,702	1,291	16,236	13,455	10,659,180	977	12,686	11,595	9,711,656	1,064	11,949

The following tables are self-explanatory, being consolidations of the quarterly tables giving the same classes of facts:

TABLE D.—*Causes of accidents to employees in coupling and uncoupling cars, year ending June 30, 1910.*

Subclass.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....	...	79	...	47	...	126	...	7
2	Adjusting coupler, cars accidentally started.....	3	20	2	11	6	41	1	5
3	Careless manipulation of uncoupling lever.....	...	23	...	13	...	38	...	1
4	Cars not equipped with automatic coupler.....	2	4	...	...	...	4	...	7
5	Coupler broken, using link and pin or chain.....	...	10	2	5	...	8	...	2
6	Coupling damaged cars.....	1	34	3	21	11	67	1	11
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....	1	24	...	7	3	46	...	2
8	Coupling with chain or other emergency appliance because of uneven track.....	...	1	...	1	...	...	...	...
9	Coupling or uncoupling safety chains.....	...	10	...	5	1	26	...	6
10	Fingers or hand caught between uncoupling lever and body of car.....	...	163	...	99	...	237	...	18
11	Uncoupling without using lever (unnecessary).....	4	26	2	28	2	65	...	1
12	Uncoupling without using lever, uncoupling lever not in working order.....	1	77	1	52	7	130	...	1
13	Foot caught in frog, switch, or guard rail.....	3	11	2	7	8	21	...	1
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	6	88	4	33	6	98	1	6
15	Opening knuckle when cars were near together, engine accidentally started.....	2	10	1	11	...	10	...	8
16	Opening knuckle, part of defective coupler fell on foot.....	...	24	...	5	...	33	...	1
17	Opening knuckle, lost footing.....	4	28	2	17	5	47	1	3
18	Riding on car to uncouple, slipped off.....	4	20	3	11	7	37	1	1
19	Struck by object at side of track.....	1	21	1	16	1	36	1	3
20	Caught by unexpected movement of car, due to slack running in.....	7	77	4	45	7	78	...	2
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....	3	10	1	10	4	21	...	2
22	Uncoupling moving cars and lost footing.....	7	43	7	20	13	72	...	4
23	Parts hard to move, causing delay.....	1	21	...	6	...	11	...	...
24	Went between cars unnecessarily and contrary to rule....	3	41	1	22	8	54	1	4
25	Hand caught between projecting load and end of next car.....	...	9	...	2	...	10	...	1
26	No witness (fatal injury).....	6	...	4	...	8	...	...	...
27	Other causes.....	1	34	...	12	...	69	...	6
28	Unexplained.....	...	19	...	14	2	41	...	9
	Total.....	60	927	40	520	99	1,426	7	112

TABLE Dx.—Nature of injuries to employees in coupling and uncoupling cars, year ending June 30, 1910.

Injuries.	Train-men.	Train-men in yards.	Yard train-men.	Other employ-ees.
Loss of feet.....	16	12	15	1
Loss of legs.....	10	7	10	1
Loss of arms.....	9	3	9	2
Loss of hands.....	5	3	4	.....
Loss of fingers.....	38	16	30	4
Loss of toes.....	9	3	4	.....
Fractured skull.....	2	.....	1	2
Fractured leg.....	11	3	8	.....
Fractured arm.....	7	7	21	2
Fractured collar bone or ribs.....	22	10	22	2
Fractured other bones.....	27	5	31	2
Contusion of head or body.....	98	57	243	17
Contusion or laceration of feet.....	81	39	138	11
Contusion or laceration of toes.....	18	15	39	2
Contusion or laceration of legs.....	49	27	97	11
Contusion or laceration of arms.....	51	30	62	5
Contusion or laceration of hands.....	116	82	155	14
Contusion or laceration of fingers.....	275	154	418	28
Dislocation.....	4	6	4	1
Internal injuries.....	15	10	9	3
Sprains.....	41	18	72	3
Miscellaneous.....	23	13	25	1
Total injuries.....	927	520	1,426	112
Killed.....	60	40	99	7
Total killed and injured.....	987	560	1,525	119

RECAPITULATION.

Total killed.....	206
Total injured.....	2,985
Total killed and injured.....	3,191

TABLE Dz.—Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines, year ending June 30, 1910.

Subclass.	Causes.	Train-men.		Train-men in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	.....	26	.....	8	.....	19	.....	1
	2 Ice or snow.....	2	27	.....	14	1	39	.....	2
	3 Parting of train.....	2	50	.....	19	.....	34	.....	5
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.....	8	227	9	121	19	362	5	44
	5 While setting brakes.....	7	177	6	108	8	252	1	6
	Fell from—								
	6 Coal car.....	7	22	3	19	3	15	6	11
	7 Freight car other than box or coal car.....	14	189	4	64	8	70	26	93
	8 Engine or tender.....	37	567	14	293	13	206	8	85
C7	9 Passenger car.....	8	34	.....	14	2	14	4	13
	10 Engines, tenders, or cars (all kinds) not in motion.....	2	309	2	141	2	115	7	250
	11 Miscellaneous causes.....	27	958	4	199	26	1,078	6	331
	12 Not clearly explained.....	60	282	17	72	29	235	16	102
	13 Slipped getting on moving trains or cars.....	20	556	5	213	6	303	20	196
	14 Jumping off moving trains.....	11	683	4	402	10	466	16	224
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	5	211	.....	29	.....	45	1	14
	16 Fell from engines or cars by reason of defective hand-holds and sill steps.....	.....	193	.....	79	1	194	1	15
	17 Getting on or off moving engine.....	20	755	12	508	10	605	19	164
	18 Caught in frog, guard rail, or switch.....	1	5	.....	3	.....	9	1	2
	Total.....	231	5,271	80	2,306	138	4,061	137	1,558

[PUBLIC—No. 171.]

AN ACT Requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, It shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions of trains or where any train or part of a train accidentally leaves the track, and of all accidents which may occur to its passengers or employees while in the service of such common carrier and actually on duty, which report shall state the nature and causes thereof and the circumstances connected therewith.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor, and upon conviction thereof by a court of competent jurisdiction shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That neither said report nor any part thereof shall be admitted as evidence or used for any purpose against such railroad so making such report in any suit or action for damages growing out of any matter mentioned in said report.

SEC. 4. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports in the foregoing section provided.

Approved, March 3, 1901.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.^a

Each accident bulletin contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A), showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. The bulletin for the quarter ending June 30, contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 25 shows 110 passengers killed in train accidents, three collisions and one derailment being responsible for 80 deaths in this class. The number of passengers killed from other causes (mostly their own negligence) also shows a large increase. One of the most serious collisions was due to the misreading of a dispatcher's order, and another to a mistake in sending or receiving the order.

Bulletin No. 26 shows a marked decrease in casualties as compared with preceding quarters, a large falling off in railroad traffic having taken place. The list of "prominent" train accidents includes only three cases which may be classed as notable.

Bulletin No. 27 shows further marked decreases in casualties incident to the large falling off in railroad traffic. The number of passengers and employees killed in train accidents (125) is the smallest since the monthly records were established. The most fatal accident in this quarter was a collision at a street crossing, where 8 passengers in an electric car were killed.

^a For notes on Bulletins 1-16, see Bulletin No. 17; for notes on Bulletins 17-24, see Bulletin No. 30.

Bulletin No 28 recorded the smallest number of passengers killed in train accidents (13) ever reported in the quarterly records. The total of passengers and employees killed in train accidents (112) was 13 less than the previous low record (125, Bulletin 27). Of the 13 passengers killed in train accidents, 7 were victims of a butting collision on an electric railroad.

Bulletin No. 29 showed totals far smaller than the corresponding quarter one year previous, but the diminution in the number of casualties, which had continued during the year of depression, seemed to have been checked. The number of passengers killed in train accidents was 53, and there were 8 notable collisions.

Bulletin No. 30 recorded 34 passengers killed in train accidents (including 15 victims of a forest fire.) One collision resulted in 8 deaths of passengers, and two derailments killed 16 employees.

Bulletin No. 31, in part, continues the favorable showing of the quarter one year previous (Bulletin 27), though it covers a period of considerable revival of business. One collision caused 20 deaths and 28 injuries.

Bulletin No. 32 shows a total of 99 passengers and employees killed in train accidents—the lowest quarterly record thus far shown. It is to be observed, however, that a butting collision, causing the death of 9 passengers and 1 employee, occurring on an electric road, was not included, the railroad company having failed to make a report of the accident as required by law. The quarter in 1908 with which this one is most naturally compared (Bulletin 28) had one collision on an electric line in which 7 persons were killed.

Bulletin No. 33 shows considerable increases in most of the casualty items, marking the expansion of traffic on all of the principal railroads. Five accidents—4 collisions and 1 derailment—caused 47 deaths.

Bulletin No. 34 shows heavy totals in the casualty lists incident to the great expansion in railroad traffic accompanying the general revival in business. There was no very notable passenger-train accident, but a collision between a work train and a freight killed 14 laborers. The list of causes of prominent collisions is unusually varied.

Bulletin No. 35 shows 110 passengers killed in train accidents, the total in this item being swelled by two great disasters, an avalanche in the State of Washington and a derailment in Iowa.

O

U. S., Interstate Commerce Commission
Washington, D. C.

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Accident Bulletin

No. 37

Railroad Accidents in the United States

During July, August, and September
1910



Washington
Government Printing Office
1911

ACCIDENT BULLETIN NO. 37

**Collisions, Derailments, and other Accidents
to Trains, Accidents to Roadway,
and Casualties to Persons**

from all causes

on the Railroads of the United States

during the months of

July, August, and September, 1910

**INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.**



**WASHINGTON
GOVERNMENT PRINTING OFFICE
1911**

THE INTERSTATE COMMERCE COMMISSION.

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EDWARD A. MOSELEY, Secretary.

RAILROAD ACCIDENTS

IN THE UNITED STATES DURING THE THREE MONTHS
ENDING SEPTEMBER 30, 1910.

The number of persons killed in train accidents during the months of July, August, and September, 1910, as shown in reports made by the railroad companies to the Interstate Commerce Commission under the "accident law" of May 6, 1910, was 321, and of injured 3,892. Accidents of other kinds, including those sustained by employees while at work, by passengers in getting on or off cars, by travelers at highway crossings, by persons doing business at stations, etc., by trespassers, and others, bring up the total number of casualties, excluding "industrial accidents," to 22,328 (2,948 killed and 19,380 injured). Accidents to employees resulting in slight injuries, which do not prevent the employee injured from performing his accustomed service for more than three days in the aggregate during the 10 days immediately following the accident, are not reported. The casualties to passengers have been divided into three classes. Class *a* includes all ordinary passengers. Class *b* includes passengers traveling on freight trains. Class *bb* includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, live-stock tenders, and men in charge of freight. The reported casualties are classified in Table No. 1, given below, and more in detail in Table 1B.¹

¹ This bulletin is the first one to be issued under the revised accident law. In previous quarterly bulletins the records have included only four classes of accidents; namely, (1) collisions, (2) derailments, (3) casualties to passengers, and (4) casualties to employees on duty. The statistics of other accidents on railroads previous to July 1, 1910, will be found in the annual statistical reports of the Commission.

The class termed "Industrial accidents," as found in the present bulletin, includes a large part of those injuries to employees, fatal and nonfatal, which in former bulletins have been included in the eighth item ("other causes") of Table No. 1. This item in the present and future Tables 1 and 1B, therefore, will not be comparable with the same item in bulletins 1 to 36, inclusive.

The item "other causes" in the former classification included most or all of the accidents which in the present bulletin are classed as follows:

	Killed.	Injured.
Table 1B, "Other causes," total of employees on duty	20	347
Other accidents on or around trains	8	241
	188	361
Being struck or run over by engine or car	6	16
	172	138
Table 1, industrial accidents:		
Item No. 6	40	5,545
Item No. 7	21	4,654
Item No. 10	21	1,492
Total	471	12,794

The statistics here given present the record of the standard railroads, for convenience called "steam roads," in distinction from electric railways. The accident statistics of those electric lines on which interstate traffic is carried, and which, therefore, are subject to the Federal accident law, are given in a second table, No. 1E, and in Table No. 2E.

TABLE No. 1.—*Casualties to persons, July, August, and September, 1910.*

Causes.	Number of accidents.	Passengers (a, b, and bb).		Employees, including em- ployees not on duty.		Other per- sons.		Total per- sons.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1. Collisions.....	1,387	47	1,014	87	903	22	42	156	1,939
2. Derailments.....	1,743	15	816	114	520	18	57	147	1,393
3. Miscellaneous train accidents, includ- ing locomotive-boiler explosions....	624	1	41	14	472	3	27	18	540
Total train accidents.....	3,754	63	1,871	215	1,895	43	126	321	3,892
4. Accidents to roadway or bridges not causing derailment, such as fires, floods, landslides, explosions, etc.	132	.....	2	.....	6	1	3	1	11
5. Accidents in connection with rail- road operation other than those to trains or roadway (classes C-3 to C-12, inclusive), not including in- dustrial accidents.....	.....	72	1,949	733	10,559	1,821	2,969	2,626	15,477
Total.....	.....	135	3,822	948	12,460	1,865	3,098	2,948	19,380
Industrial accidents to employees:									
6. While working on tracks or bridges.....	.....	.....	.....	40	5,545	.....	.....	40	5,545
7. At stations, freight houses, engine houses, coaling stations, water stations, etc., where no moving railroad car or engine is in- volved.....	.....	.....	.....	21	4,654	.....	.....	21	4,654
8. In and around shops.....	.....	.....	.....	15	9,028	.....	.....	15	9,028
9. On boats and wharves.....	.....	.....	.....	35	283	.....	.....	35	283
10. At other places.....	.....	.....	.....	21	1,492	.....	.....	21	1,492
Total casualties in industrial accidents.....	.....	.....	.....	132	21,002	.....	.....	132	21,002
Total casualties in all accidents.	.....	135	3,822	1,080	33,462	1,865	3,098	3,080	40,382

NOTE.—Accidents occurring in connection with railroad operation or distinctively railroad work are covered in the items numbered 1 to 5, inclusive. The same statistics are given more in detail in the double-page table on pages 12 and 13. "Industrial" accidents (items 6 to 10, inclusive) are those occurring to employees of the railroad on railroad premises in which movements of cars or engines are not involved.

The totals of the items in Table No. 1 are swelled by the inclusion of classes of casualties not heretofore shown in the quarterly bulletins, as already explained, but the lists of casualties are also very large in those items which are made up on the same basis as under the former law, as will be seen by reference to Table 1A, below. In the first, third, and fourth items of that table the increases over the corresponding quarter of 1909 are very large. Except in the first item, it is possible that the increases are in part due to the adoption of more careful methods of keeping records by the railroads, consequent on the change in the law, though there is no conclusive evidence of this. In Table 2A, giving causes in detail, the record of

passengers killed in train accidents (63 in Table 1) is further swelled by the inclusion of 2 disastrous collisions on electric railways in which 40 persons were killed. Table 2A contains 8 collisions, in which 95 persons were killed and 125 were injured, and 1 derailment in which 14 were killed and 22 injured. In the corresponding quarter of the preceding year the 5 most serious accidents caused 47 deaths.

TABLE NO. 1A.—Comparison of principal items with last bulletin and with one year back.

	Bulletin 37.	Bulletin 36.	Bulletin 33.
1. Passengers killed in train accidents.....	63	12	56
2. Passengers killed, all causes.....	135	55	104
3. Employees (on duty) killed in train accidents.....	209	125	137
4. Employees (on duty) killed in coupling.....	56	45	38
5. Employees (on duty) killed, all causes.....	869	711	748
6. Total, passengers and employees (items 2 and 5, above).....	1,004	766	852
7. Other persons killed (including trespassers, nontrespassers, and employees not on duty), all causes.....	1,944		
8. Employees killed in industrial accidents.....	132		

The total number of collisions and derailments in the quarter now under review was 3,130 (1,387 collisions and 1,743 derailments), of which 212 collisions and 188 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,871,501. Given more in detail, these facts appear as below (collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported):

TABLE NO. 2.—Collisions and derailments.

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	301	\$342,368	27	413
Collisions, butting.....	184	424,846	85	831
Collisions, train separating.....	97	33,833	5	46
Collisions, miscellaneous.....	805	401,600	39	669
Total.....	1,387	1,202,647	156	1,959
Derailments due to defects of roadway, etc.....	290	173,875	10	276
Derailments due to defect of equipment.....	796	713,309	30	242
Derailments due to negligence of trainmen, signalmen, etc.....	112	134,365	16	193
Derailments due to unforeseen obstruction of track, etc.....	93	161,287	49	210
Derailments due to malicious obstruction of track, etc.....	35	36,526	5	51
Derailments due to miscellaneous causes.....	417	449,492	37	421
Total.....	1,743	1,668,854	147	1,393
Total collisions and derailments.....	3,130	2,871,501	303	3,352
Total for same quarter of 1909.....	2,751	2,316,014	180	3,341
1908.....	2,567	1,950,408	176	2,729
1907.....	4,279	3,606,696	309	4,534

Following is the usual list of class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest:

INTERSTATE COMMERCE COMMISSION.

TABLE NO. 2A.—*Causes of 43 prominent train accidents.*

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
1	M	F and F.....	2	1	\$2,072	11	Freight train ran into side of work train. Dispatcher had allowed work train on main track until 10:30 p. m., without sending a copy of the order to other trains. There was only one train in the vicinity and the dispatcher assumed it would be impossible for this train to reach the work train by 10:30.
2	B	F and F.....	1	1	3,300	49	North-bound train ran past meeting point. (See note in text below.)
3	B	P and P.....	2	29	3,550	86	Confusion of meeting orders and failure in block working. (See note in text below.)
4	B	P and F.....	0	93	3,625	12	Motorman of north-bound electric work car ran past a meeting point fixed by dispatcher's order. (See note in text below.)
5	B	F and F.....	0	3	4,400	54	Dispatcher, 27 years old, with three years' experience, issued "lap orders." His conduct in connection with these orders is characterized in the report as gross negligence.
6	R	P. and P.....	2	38	4,800	42	Passenger train entered station at excessive speed. Two passengers killed.
7	B	F. and F.....	0	0	5,030	8	Operator in receiving order omitted four words. He claims that the words must have been cut off by the sticking of the relay, but another operator at the same time received the same order correctly.
8	B	F. and F.....	4	3	6,461	94	False clear block signal given by signalman who was intoxicated. (See note in text below.)
9	B	P. and F.....	0	22	6,481	89	Failure to deliver meeting order. (See note in text below.)
10	B	F. and F.....	2	5	7,650	52	Agent accepted hold order after train had passed; was confused as to fourth and fifth sections of a freight, and made wrong entries on block sheet.
11	M	P. and F.....	1	14	8,000	10	Coal cars ran away from mine. (See note in text below.)
12	B	P. and P.....	2	20	8,430	88	Error in meeting order. Operator of 10 years' experience wrote "east" in place of "west," but according to dispatcher repeated the order correctly. Conductor and engineman at fault for accepting order, as it bore internal evidence of irregularity.
13	B	P. and F.....	0	9	8,950	45	West-bound freight failed to clear east-bound 5 minutes, as required by rule; east-bound ran past train-order signal.
14	B	F. and F.....	0	6	10,776	84	North-bound train encroached on time of south-bound. South-bound also left station a little ahead of time; dense fog prevailed. (See note in text below.)
15	R	F. and F.....	1	1	12,000	81	Brakeman, who was killed, failed to properly protect train by flag; occurred in fog at 1 a. m.; train moving slowly.
16	B	P. and P.....	2	82	13,200	87	Misplaced switch at crossover.
17	R	P. and F.....	0	2	15,000	80	Excessive speed under permissive block signal.
18	R	F. and F.....	0	2	16,792	44	Fast freight train ran too fast under caution signal and disregarded distant signal at entrance of next block section.
19	B	F. and F.....	1	4	17,819	7	Conductor misread name of station in meeting order. Engineman killed. There were two names in the body of the order and the conductor seems to have confused them.
20	R	P. and P.....	9	17	18,000	41	Disregard of red light by engineman of passenger train. (See note in text below.)
21	B	F and F.....	4	8	18,000	51	Operator of two years' experience and two months in the service at this office, accepted an order after train had passed. This collision occurred at 2:20 a. m. The operator disappeared next morning.
22	B	P and F.....	12	24	18,871	46	Conductor and engineman of west-bound work train waiting for two east-bound passenger trains started out after only one of the trains had passed. (See note in text below.)
23	B	F and F.....	6	5	19,175	47	Operator failed to deliver order. (See note in text below.)
24	B	P and F.....	20	39	27,758	3	Failure to deliver telegraphic order. (See note in text below.)

TABLE NO. 2A.—Causes of 43 prominent train accidents—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
25	B	P and P	34	11	\$7,000	99	South-bound extra car (on electric railway) encroached on time of north-bound regular car. (See note in text below.)
26	B	P and P	6	18	.....	100	South-bound extra passenger car encroached on time of regular north-bound car. (Electric Railway).
Total			111	457	266,640	.....

DERAILMENTS.

1	D	P	0	7	\$2,200	16	False clear night signal at derailing switch. Red glass had been broken and light showed white. Cause of breakage of glass undiscovered.
2	D	P	0	7	2,675	24	Unknown. (See note in text below.)
3	D	P	0	0	3,285	107	Loose tire on wheel of tourist sleeping car.
4	D	F	0	0	5,202	116	Train of 43 empty cars running through a sag; the rear part of train pushed the cars together and forced one of them off the track.
5	D	P	3	40	5,700	123	Unexplained. Speed 60 to 65 miles an hour. The tender was the first vehicle to jump the track.
6	D	F	0	1	6,600	103	Cars ran off end of track on trestle, because brake chain became knotted.
7	D	P	0	25	7,461	114	Switch thrown immediately in front of fast train by apprentice signal man, without instructions. Signal man was engaged at telephone. Train derailed by running at high speed through cross-over.
8	D	F	0	3	10,360	162	Fault in brake rigging of rear driving wheel. Wreck partly destroyed by fire due to spontaneous combustion.
9	D	P	14	22	10,500	115	Washout 12:25 a. m. (See note in text below.)
10	D	F	0	0	10,700	20	Broken wheel; seam in flange.
11	D	P	0	15	12,124	14	Broken angle bar.
12	D	P	3	35	12,147	32	Accidental obstruction. (See note in text below.)
13	D	P	0	6	13,700	67	Misplaced switch. Switch had been left wrong by employee of bridge and building department. Engineman and fireman held not blameworthy.
14	D	F	1	1	14,510	60	Improper handling of air brakes approaching crossing on descending grade of 1 per cent. Engine ran off at derailing switch.
15	D	F	0	0	14,600	68	Accidental obstruction (steel brake beam lying on track).
16	D	P	0	5	15,000	36	Excessive speed on sharp curve; 11 p. m. Engineman of 19 years' experience.
17	D	P	2	6	15,200	111	Explosion of locomotive boiler. Fire box failed by weakness due to excessive heat, caused by low water. Engineman and fireman killed.
18	D	P	2	3	15,700	15	Bridge weakened by fire. Engineman and fireman killed. Train approached bridge over curved line and conductor saw fire and applied brakes, but too late. Cause of fire unknown.
19	D	P	2	8	16,450	39	Excessive speed (estimated 70 miles an hour) over curve of 10 degrees. Engineman and fireman killed.
20	D	P	4	36	21,500	28	Misplaced switch. Primary responsibility rests on condhotor and brakeman of freight train which had used the switch a short time before, but the engineman and fireman of the passenger train, who were killed, are held to have been partly responsible, as the switch could have been seen in season for slackening speed.
21	D	F	0	1	21,800	22	Tires of driving wheels of engine slipped and caused rails to spread. (See note in text below.)
22	D	F	0	0	23,307	76	Excessive speed with ore cars suitable to be run only at low speed.
23	D	F	2	2	31,700	73	Runaway on steep grade. (See note in text below.)
Total			23	223	297,610	.....
Total collisions and derailments.			144	680	564,250	.....

Collision No. 2, occurring about 4 a. m., was caused by a north-bound freight running 4 miles past the station at which it should have met a south-bound freight. The conductor of the north-bound train had tried to get the dispatcher to give him an order to run to D, but did not succeed; but the name of this place—D—appears to have stuck in his mind, and in reading his order to the engineman he read that name into it, though the order plainly read E; and E was the station that the train ran past. The report says that the engineman repeated the order to the conductor, but nevertheless the error went undetected. A brakeman of the train had seen the order and had read it correctly, but he was asleep in the caboose when certain south-bound trains were met, and when his train left E he assumed that all south-bound trains, for which his train should wait, had passed.

Collision No. 3, occurring at 6:27 p. m., was due to mistakes and confusion in the delivering of meeting orders on the part of telegraphers, to lack of care on the part of the conductor and engineman of a train, and to failure to carry out manual block signal rules. The trains involved were No. 6, running eastward from A to B, C, D, E, and F, and No. 1, running in the opposite direction, both regular passenger trains. The dispatcher, finding that train No. 1 was a little late, sent order No. 22, requiring these trains to meet at C. This order was sent to the eastbound train at A and to the westbound at F; and it was also sent to C, the station where the trains were to meet. Subsequently, finding that No. 1 was losing time, the dispatcher determined to change the meeting point to D, one station farther east, and prepared order No. 27 to that effect. This order was sent to B for No. 6 and to E for No. 1. The operators at C and D did not answer promptly. As soon as this order was sent, and before it was repeated, the operator at E reported that No. 1 was coming, and the dispatcher then decided to leave in force the original order; so he told the operator at E and operator W at B to destroy order No. 27. This proceeding was proper, as the order had not been repeated. Operator W at B says that he did not understand the dispatcher; and he did not destroy the order. He had written on it, prematurely, the word "complete," which word, when accompanied by a notation of the time, makes an order valid for use. He then became engaged in other duties (selling tickets) and forgot about this unfinished order. At this time the night operator, S, came on duty and he (S), without consulting the day operator, delivered this unfinished order to train No. 6. He saw that the order bore the word "complete," but failed to notice that it lacked the time indorsement, which was an essential element. The conductor, engineman, fireman, and one brakeman of train No. 6 also accepted and read the order, not noticing this irregularity; and train No. 6 then proceeded from B.

On arrival at C this train should have received a copy of the original order No. 22, fixing the meeting point at C (copies of meeting orders being regularly sent to operators at meeting points), but the operator at this station neglected to deliver this copy, and instead gave the conductor and engineman a clearance card, showing that he had no orders for that train and that the block section (C to D), which the train was to enter, was clear. He claims to have told the conductor by word of mouth that the clearance card would be valid only after the arrival of the west-bound train, but this is not substantiated; and besides, oral instructions contrary to written orders are forbidden. Under the block-signal rules this clearance card could not be given until after receipt of word from D that the block section was clear and would be kept clear for train No. 6, nor should the card be used at all unless there were some good reason for not clearing the signal. Moreover, this operator but a few minutes before, as required by the rules, had promised D that he would hold all east-bound trains for the arrival of train No. 1. On this clearance card train No. 6 left C, and the collision occurred about 1 mile east of that place. Both of the men at B and the one at C had been in the employ of this company for several years, and all three were regarded as efficient operators.

The block-signal system in use on this line is the "Controlled manual," but there is no track-circuit control, and the rules permit a clearance card to be given under certain conditions without putting the signal in the position to give a "proceed" indication. A card was thus given in this case, but without any reason or excuse. In consequence of the use of the same outdoor fixed signal for the two functions of a block signal and a train-order signal there is a complication in the rules concerning the use of a clearance card as a substitute for the giving of a proceed indication by the fixed signal, but it does not appear that this conduced to the commission of the error in this particular case.

Collision No. 4, which occurred on an electric road, was due to disobedience of a meeting order by both the conductor and the motorman of a north-bound work train. Each of these men had received a copy of the order about 30 minutes before the collision, and it appears that both of them fully understood it. Neither had any other order in his possession at the time. The report says: "The motorman states that he was writing out certain freight bills and asked the conductor twice whether the south-bound car had passed, and was assured that it had. The conductor states that he supposed the motorman would attend to the orders while he (the conductor) was looking around the cars, his attention being taken by some wires that were loose."

Collision No. 8, occurring at 3:30 a. m., was due to a false clear-block signal. The signalman, disqualified by being under the influence of intoxicating liquor, gave a clear signal to a south-bound extra train to enter a section already occupied by a north-bound regular train. There was a dense fog at the time so that neither engineman had a view of the opposing train in season to slacken his speed. According to the rules the signalman at this point should give a clear signal only after receiving word from the train dispatcher. This signalman had been in the employ of the company as an extra man for about three months. His mental condition after the collision was such that no explanation could be had of his error. He was arrested and held for the grand jury on a criminal charge, but the result of the trial is not yet reported.

Collision No. 9, between a south-bound passenger train and a north-bound freight, was due to the failure of an operator to deliver an order to the south-bound train. This train was to meet the north-bound at H, and the order for it was sent to the operator at that point. The train made its regular stop there to meet a north-bound passenger train and to take water, but as it approached the station the engineman sounded the regular whistle signal, indicating that he desired a clear train-order signal, and the operator, forgetting the order on his table, at once changed the signal to the "proceed" position. The operator is held negligent for not having reported to the dispatcher that the train was approaching the station, and also for neglecting to use the "telltale" device, an arrangement for covering the lever of the signal in such a way as to remind an operator of the presence of an order in his office in case he should inadvertently attempt to change the signal when it ought to be left in the "stop" position. After the train had left, he discovered the order lying on his telegraph table and immediately notified the dispatcher; but it was then too late to stop the north-bound train. Up to the time of this accident this operator's record had been good. He had been at H two years and had had four years' experience in all.

Collision No. 11 was due to the presence on the main line of five coal cars, which had escaped control at a mine about a mile away from the railroad and had run to the main track before the men in charge could stop them. These cars had run away because of carelessness of men at the loading point in pushing a loaded car against four others which were standing on a grade with the wheels blocked, but with blocks not large enough to withstand the shock which they were given by the moving car. There is a derailing switch below the mines, which ordinarily would have thrown these cars off the track, but it had been closed a few minutes before by a switching crew, to facilitate their switching movements, and the runaway cars came

along just as the engine had cleared the running track. There is no derail near the main line of the railroad, the reason given for not having one at this point being that because of the presence of buildings close to the track there is no suitable place for a derail. The statement of the railroad company says that, to provide against a collision of this kind in the future, it is proposed to install two derailing switches, so connected with each other that when one of them is closed, ahead of the switching engine, another one, in the rear of the engine, must at the same time open.

Collision No. 14, between north-bound and south-bound freight trains, occurred about 6 a. m., in a dense fog. The north-bound train had reached a point about 3,000 feet short of a switch, at a passing station, where it should have cleared the south-bound train. The southbound train appears to have been a few minutes ahead of time. The evidence as to the precise time is conflicting, but the main responsibility is thrown upon the north-bound train, as it was running in violation of the rule which required it to reach the meeting point and be clear of the main track before the leaving time of the south-bound train.

Collision No. 20, killing 9 persons and injuring 17, occurred about 10:43 o'clock in the evening and resulted in the wreck of a sleeping car, which took fire from the locomotive that crushed it, and was completely destroyed. This sleeping car was the rear car in a passenger train which had been stopped for the purpose of making slight repairs, and it was run into by a following passenger train, after having been stopped about 25 minutes. The report says that the flagman of the standing train went back promptly a distance of about 2,400 feet, to a highway crossing, and there placed a torpedo on the rails; and that there was a clear view from the standing train back for 2 miles to the station at D, the switch lights of which were plainly visible. The engineman of the second train appears to have taken no action toward stopping until after he passed over the torpedo, and even then the brakes appear not to have been applied with full force. The brakeman who went back with the red light and torpedoes says that he watched the approaching train from the time it started from D, and that he continued to give the stop-signal motion with his lantern until he was obliged to step off the track to avoid being run over. The train passed him at high speed. The conductor of the standing train saw the motions of the brakeman's lantern and heard the explosion of the torpedo. The sleeping car conductor was on the ground at the rear of the train, and he also saw the stop signals given and heard the explosion of the torpedo. The porter of the sleeping car also watched the brakeman and gives similar testimony. He says that he was

TABLE No. 1B.—Casualties to passengers, employ

	Passengers (a).		Passengers on freight trains (b).		Persons carried under agreement or contract (bb).		Total (a, b, and bb).		Trainmen (c).		Trainmen in yards (d).	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	35	941	2	21	10	52	47	1,014	49	463	15	15
Derailments.....	15	642	.....	44	.....	130	15	816	97	362	5	5
Accidents to trains, cars, or en- gines, except collisions, derail- ments, and boiler explosions....	.....	29	.....	2	1	8	1	39	2	101	.....	.....
Bursting of, or defects in, locomot- ive boilers or boiler attach- ments.....	.....	2	.....	.....	.....	.....	.....	2	7	201	.....	.....
Total train accidents.....	50	1,614	2	67	11	190	63	1,871	145	1,127	20	20
Accidents to roadway or bridges not causing derailment, such as fires, floods, landslides, explo- sions, etc.....	.....	2	.....	.....	.....	.....	.....	2	.....	1	.....	.....
Coupling or uncoupling cars (does not include accidents with air or steam hose).....	.....	.....	.....	.....	.....	.....	.....	.....	20	219	10	10
While doing other work about trains (not in shops or engine houses) or while attending switches.....	.....	.....	.....	.....	.....	1	.....	1	11	2,632	12	12
Coming in contact, while riding on cars, with overhead bridges, tunnels, or any signal appara- tus, or any fixed structure above or at the side of the track.	4	11	.....	.....	.....	3	4	14	18	210	2	2
Falling from cars or engines.....	19	82	.....	2	3	18	22	102	37	567	26	26
Getting on or off cars or engines..	25	650	.....	14	.....	23	25	687	12	788	6	6
Other accidents on or around trains not here named.....	1	808	.....	68	.....	112	1	988	.....	37	.....	.....
Being struck or run over by en- gine or car at stations or yards.	12	21	.....	1	2	3	14	25	15	35	23	23
Being struck or run over by en- gine or car at highway grade crossings.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Being struck or run over by en- gine or car at other places.....	1	2	.....	.....	2	.....	3	2	18	18	.....	.....
Other causes.....	3	123	.....	1	.....	6	3	130	4	118	1	1
Total, other than train ac- cidents.....	65	1,699	.....	86	7	166	72	1,951	135	4,626	80	80
Grand total.....	115	3,313	2	153	18	356	135	3,822	280	5,753	100	100

a persons; July, August, and September, 1910.

Injured.	Switch tenders, crossing tenders, and watchmen (e).		Trackmen and bridgemen (f).		Other employees (g).		Total employees on duty (c, cc, d, e, f, and g).		Employees not on duty (h).		Other persons not trespassing (i).		Trespassers (j).		Total persons.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
116	1	1	5	39	7	70	85	817	2	86	1	27	21	15	156	1,959
48	.....	1	5	18	8	39	110	514	4	6	.....	22	18	35	147	1,393
37	.....	.....	.....	3	.....	.....	5	165	.....	2	1	17	2	9	9	232
37	.....	.....	.....	.....	.....	3	9	305	.....	.....	.....	.....	.....	1	9	308
238	1	2	10	60	15	112	209	1,801	6	94	2	66	41	60	321	3,892
4	.....	.....	.....	.....	.....	.....	.....	6	.....	.....	1	3	.....	.....	1	11
356	.....	1	.....	.....	2	14	56	722	.....	.....	.....	.....	.....	.....	56	722
008	.....	46	2	40	6	187	45	4,833	.....	3	.....	7	.....	.....	45	4,844
120	.....	2	.....	3	1	17	25	443	.....	1	1	3	13	33	43	494
433	1	6	5	49	10	70	103	1,397	3	18	4	20	111	199	243	1,736
527	2	17	6	43	8	112	42	1,843	11	88	4	47	145	481	227	3,146
10	.....	7	2	33	6	139	8	241	.....	21	2	122	5	74	16	1,446
72	9	18	42	74	62	124	183	361	22	24	37	96	251	303	507	809
3	5	3	.....	1	1	8	6	16	5	1	267	598	35	31	313	646
4	11	4	106	79	37	31	172	138	30	21	27	35	874	385	1,106	581
50	.....	10	7	45	7	100	20	347	2	41	8	394	37	141	70	1,053
587	28	114	170	367	140	802	660	10,347	73	218	351	1,325	1,471	1,647	2,627	15,488
825	29	116	180	427	155	914	869	12,148	79	312	353	1,391	1,512	1,707	2,948	19,380

sure that the brakeman went as far as the road crossing, because he saw the light of the brakeman's lantern reflected from the white-washed wing fence of the crossing.

The engineman of the second train declares that he did not see the red tail lights of the standing train. He says that on hearing the torpedo he made a service application of the brakes. After the collision he went back to see if he could find the remains of the torpedo, using in his search a tail lamp which he found in the rubbish of the wreck. This tail lamp was afterwards picked up by a road foreman of locomotives and proved to be the one which was on the left-hand side of the rear car of the standing train.

The conductor of the second train heard the explosion of the torpedo and says that the air brakes were immediately applied, but only slightly; and that after application, and before the collision, they were released. The baggage man and the train porter in the baggage car of this train heard the explosion of the torpedo and spoke about it. This baggage man, who was entering on his record the pieces of baggage which he had just taken into his car, walked to the end of the car after hearing the explosion, and returned to the center and remarked to the porter that it was strange the engineer did not stop; all of this before the collision occurred.

The rear flagman of the second train did not hear the explosion of the torpedo, but he saw the flagman of the leading train standing at the side of the track as his (the second) train passed him. Immediately after the collision he went back to protect his own train and at the road crossing found the brakeman of the standing train.

The leading train had left its rear car at D and at the inquest held by the coroner testimony was offered to the effect that the tail lights (markers) were not transferred from this car to the car ahead, but besides the circumstantial evidence already noted, the report says that a trainmaster of the road was at D that night and that he noticed particularly that the markers were in place and brightly burning when the train departed.

The engineman of the second train was first employed by this company in 1881. He was dismissed in 1885 and reemployed 4 months later. Nine years later he was out of the service temporarily by reason of a strike. In the 19 years since 1881 his record shows 20 suspensions or reprimands.

The conductor of the standing train was first employed by this road in 1894. Four years later he was dismissed for negligence but was reemployed within a month. Eleven months later he was dismissed again, and was reemployed on July 19 of the present year, or a little over one month prior to the accident. During the 11 years that he was out of the service he was employed on other roads, most

of the time as freight and passenger conductor and as yardmaster, but during the past two years he was a farmer.

The brakeman or flagman of this train had been in the service 24 days. He is 23 years old, and his last work before coming to the railroad was as a carpenter; but he had had railroad experience as a fireman, baggageman, and clerk, aggregating 18 months. He was employed this year by an experienced trainmaster and, according to the report, he not only was found to possess the proper knowledge and intelligence to perform the duties of a passenger brakeman, but also is held by the superintendent to have done, in this particular case, all that could be expected of him.

Collision No. 22 was between a west-bound extra freight train and an east-bound regular passenger train. It occurred on a curve where neither of the enginemen had more than a few seconds' view of the opposing train before striking it; and 12 passengers were killed and 18 injured. The tender of the engine of the passenger train penetrated the baggage car and the rear end of the baggage car penetrated the smoking car, and nearly all of the victims were in the smoking car. The extra freight train, after receiving orders to run from A to B, was moved some distance away from the station to the west end of a sidetrack, there to await the arrival of two regular east-bound passenger trains, the first one of which was 25 minutes late. After this first passenger train arrived and passed, the extra was started out; and it ran about 2 miles before the collision occurred. The conductor of the extra train states that he "entirely overlooked" the second train. The engineman sustained a fractured skull, and was so seriously injured that at the time the report was made he was not able to make any statement concerning his relation to the wrong movement of the train.

Collision No. 23 was due to failure of a telegrapher to stop a train for which he held an order. This operator was 20 years of age and had been in the service of the railroad 3 months. Previous to this he had had 8 months' experience on another road. In sending the order the dispatcher gave the usual signal on the wire and the operator responded with the letters "RD," indicating that he had displayed the red (stop) signal; and afterwards the dispatcher again asked him if the signal was displayed and the operator replied in the affirmative. But after the accident he offered the explanation that the signal, when released by him, did not move to the stop position. The superintendent doubts the truth of this statement, adding that he has never known of a signal of this kind to fail in that way.

Collision No. 24, in which 20 persons were killed and 39 injured, was between a south-bound passenger train and a north-bound freight train. The passenger train was running at high speed. The cause

was the failure to deliver meeting orders. The freight train was running northward from A to B, C, D, etc. An order had been sent to its conductor at A to the effect that the passenger train would wait at C until a certain hour. The dispatcher intended to send the same order to the passenger train at D, but "through oversight" failed to send it in season. Discovering this error, he then tried to send word to B to hold the freight there, but he did not succeed in doing this until after the freight had passed B, and the collision occurred between B and C. This dispatcher was 32 years of age, and had been in the service of the road 7 years; his habits and character were "excellent," and his service "very satisfactory." Of the victims of this accident, 9 (6 killed and 3 injured) were trespassers, riding on the front end of the front car of the passenger train. It is supposed that these trespassers had boarded the train at its last stop, though no one saw them get on.

Collision No. 25, in which 34 passengers were killed and 7 passengers and 4 employees were injured, occurred on an electric interurban railway and was between a south-bound car running as an extra train and a northbound car running as a regular train. The south-bound, which should have kept clear of the time of the north-bound, ran past the sidetrack at which it should have waited and also past the next sidetrack; and the collision occurred at a point on a curve where neither motorman had more than a short distance in which to see the opposing car. The collision occurred about noon. All of the persons killed were on the northbound car, which was completely wrecked. The south-bound car carried no passengers. The motorman running the south-bound car, who is principally at fault, had acted as motorman of the northbound regular train for 60 days previous to this collision, and he had been employed on this division of the road about six months, previous to which he was a motorman on city street railway lines. The report says that no statement has been secured from this motorman and that he is confined in an asylum. He is 35 years old. The conductor of this car, who is equally responsible with the motorman, is 23 years old. He was first employed as conductor on this line about 11 months previous to the collision, but had resigned and was out of the service until about one month before the collision.

Derailment No. 2 was that of a train running about 50 miles an hour, and the first vehicle to leave the track was the tender. All of the cars in the train were derailed, but the injuries to persons were not severe. The officers of the road were unable to reach any positive conclusion as to the cause of this derailment, but they found a probable cause in the extremely tight coupling between the engine and the tender and to the fact the buffer plate on the engine

was worn to a depth of about one-half inch, and the buffer plate of the tender was also worn some. The report says: "Although there were no marks to show that the buffer plate on the engine had tended to raise the tender, it is possible that it acted that way." The accident occurred on a curve of $3^{\circ} 3'$; superelevation of outer rail 8 inches.

Derailement No. 9, which occurred in the middle of the night, was due to a washout caused by a cloudburst. The very unusual volume of water was held back by the embankment of the railroad until it flowed over the top and crossed the tracks, and then a length of track about 350 feet long was washed out, and, for a length of about 20 feet, the earth was washed away to a depth of 7 feet. Of the 14 persons killed, 9 were passengers, 3 were trainmen, 1 was an employee not on duty, and 1 was a trespasser. The report says that this cloudburst was a most extraordinary occurrence. Two residents of the neighborhood, who have lived there for 30 years, say that 7 inches of water fell in about 30 minutes. At the next station east of the point of trouble very little rain fell, while at the next station west, although there was a hard rain, it was not such as to cause alarm. A number of highway bridges were washed away.

Derailement No. 12, in which the engineman, fireman, and baggage-man were killed, was due to the displacement of a door on a freight car by the shifting of the goods within the car; this door, falling from the car in an eastbound train, lodged on the rails of the westbound track, and it was struck by a passenger train running at high speed. The engine and baggage car were overturned, and 4 other cars were derailed. This accident occurred about 3 o'clock a. m. The first wheels to jump the track were the trailing wheels of the engine. All the rest of the train remained on the track for over a mile.

Derailement No. 21 was caused by a freight train becoming uncontrollable on a descending grade because of improper handling of air brakes by the engineman. By long-continued application of the brakes on the driving wheels of the engine the tires on these wheels became so hot that they slipped laterally on the wheel centers, and as a result they produced abnormal side pressure on the rails, forcing one rail out of place and derailing the engine and a number of cars. This accident occurred at 2 o'clock in the morning, and the trainmen had been on duty 10 hours and 10 minutes. The testimony concerning the conduct of the engineman in regard to the handling of the air brakes is not clear, but it appears that after finding that the speed of the train was not slackening properly he took a stick (to use as a lever) and went back over the cars to set hand brakes; and all the time that he was away from the engine the driving-wheel brakes, worked by "straight" air, remained set. The engine was in

good condition and the air brakes had been working properly, and at the commencement of the descent there was a sufficient supply of air. The brakemen were held blameworthy for not setting hand brakes. These men claim that they did not hear the brake signal which was given by the engine whistle. The conductor, who was in the caboose making out reports, was held blameworthy for not noticing that the train had passed a certain place where it was usual to stop for the purpose of cooling the wheels.

Derailment No. 23 was caused by a freight train becoming uncontrollable on a descending grade of 78 feet per mile because of improper management of the air brakes. This derailment occurred about 2 a. m. The train consisted of an engine, 62 cars, and a caboose. In consequence of the excessive speed the twenty-third car in the train was derailed at a sharp curve, and, with 33 cars next behind it, was piled up in a very bad wreck. The whole mass took fire and was burned up. The origin of the fire is unknown, but it is conjectured that it started in a car loaded with oil cake. The engine, with 22 cars, ran a half mile farther and was derailed and wrecked at a frog because of the looseness of the tires of the driving wheels, which had become heated by the brakes being kept set for too long a time. It is estimated that the speed of the train rose to 55 miles an hour or higher. The engineman was killed, and the precise nature of the trouble with the air brakes can not be made out. So far as can be discovered the engineman had applied and released the brakes too frequently to admit of recharging the auxiliary cylinders. The testimony of the surviving members of the crew indicates that he did not apply the air brakes until some time after giving the whistle signal for the application of the hand brakes.

The engineman was 66 years old and the company gives him a good record. The air-brake apparatus was connected for operation on all the cars of the train but one. The conductor had noticed the excessive reduction of the air pressure as shown on the air-brake gauge in his caboose, but when he finally opened the conductor's valve it was too late for this to have any effect on the wheels.

TABLE 3.—Causes of accidents to employees in coupling and uncoupling cars.

Subclass.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1	Adjusting coupler with foot.....		24		15		32		4
2	Adjusting coupler, cars accidentally started.....	3	9		4	1	9		
3	Careless manipulation of uncoupling lever.....		7		4		3		
4	Cars not equipped with automatic coupler.....								1
5	Coupler broken, using link and pin or chain.....		2				5		
6	Coupling damaged cars.....	2	6	1	6	2	16		
7	Coupling with chain or other emergency appliance on curve too sharp for automatic coupling.....		3	1	3		7		
8	Coupling with chain or other emergency appliance because of uneven track.....				1				
9	Coupling or uncoupling safety chains.....	1	4		2		1		
10	Fingers or hand caught between uncoupling lever and body of car.....		43		1				
11	Uncoupling without using lever (unnecessary).....		3		3		14		
12	Uncoupling without using lever, uncoupling lever not in working order.....	2	22		10		37		
13	Foot caught in frog, switch, or guardrail.....	1	2	1	2	2	4		
14	Opening or closing knuckle when cars were near together, miscalculated speed.....	1	19		15	6	31		
15	Opening knuckle when cars were near together, engine accidentally started.....	1	2		6	1	5		
16	Opening knuckle, part of defective coupler fell on foot.....		4				3		1
17	Opening knuckle, lost footing.....	1	1		1	2	4		
18	Riding on car to uncouple, slipped off.....	1	2	1	1	3	14		
19	Struck by object at side of track.....		6		1		4		
20	Caught by unexpected movement of car, due to slack running in.....		15	2	9		18		3
21	Caught by unexpected movement of car, due to mistake or misunderstanding in giving hand signals.....		6		4	1	2	1	
22	Uncoupling moving cars and lost footing.....	1	11	3	4	2	16		2
23	Parts hard to move, causing delay.....		3		2		5		
24	Went between cars unnecessarily and contrary to rule.....	3	5	1	8	2	22		2
25	Hand caught between projecting load and end of next car.....		4		3		4		
26	No witness (fatal injury).....	3				2		1	
27	Other causes.....		8		8		18		
28	Unexplained.....		8		9		9		2
	Total.....	20	219	10	132	24	356	2	15

Details of injuries included in Table 3, subclass 27.

- J. 1. Lump of coal fell from car.
- J. 2. Stumbled over tie.
- J. 3. End gate closed, catching finger.
- J. 4. Ring on finger caught on chain.
- J. 5. Apron on gravel car slipped.
- J. 6. Coupling cinder cars, cinders splashed over.
- J. 7. Struck by piece of exploding torpedo.
- J. 8. Piece of coal fell from car.
- J. 9. Stepped on piece of glass.
- A. 1. Struck foot against rail.
- A. 2. Cut hand on splinter of steel.
- A. 3. Splinter of steel on lever cut finger.
- A. 4. Fell through bridge.
- A. 5. Stepped on bolt.
- A. 6. Stepped on nail.
- A. 7. Plank fell off car.
- A. 8. Stepped on nail.
- A. 9. Stepped on lump of coal.
- A. 10. Scrap iron fell from car.
- A. 11. Air hose flew up.
- A. 12. Cut hand on sliver on car.
- A. 13. Log fell from car.
- A. 14. Coupling car of logs; end of log struck leg.
- S. 1. Lump of coal fell from car.
- S. 2. Struck by air hose.
- S. 3. Caught finger in knuckle.
- S. 4. Cut hand on splinter of steel on lever.
- S. 5. Struck hand against nail in car.
- S. 6. Glove caught in coupler.
- S. 7. Placed hand on drawbar; pinched.
- S. 8. Struck knuckle pin with hand, bruising hand.
- S. 9. Struck finger with piece of iron in trying to open knuckle.
- S. 10. Lump of coal fell from car.
- S. 11. Caught foot under wheel.

TABLE 3A.—*Nature of injuries to employees in coupling and uncoupling cars.*

Injuries.	Trainmen.	Trainmen in yards.	Yard trainmen.	Other employees.
Loss of feet.....	2	2	4	.....
Loss of legs.....	2	1	2	.....
Loss of arms.....	1	1	.....	.....
Loss of hands.....	.....	.....	1	.....
Loss of fingers.....	10	5	13	1
Loss of toes.....	4	.....	2	.....
Fractured skull.....	.....	.....	1	.....
Fractured leg.....	1	.....	2	1
Fractured arm.....	2	3	5	.....
Fractured collar bone or ribs.....	4	3	3	.....
Fractured other bones.....	9	1	12	.....
Contusion of head or body.....	22	11	42	1
Contusion or laceration of feet.....	27	15	38	3
Contusion or laceration of toes.....	7	2	9	2
Contusion or laceration of legs.....	7	6	25	1
Contusion or laceration of arms.....	10	4	19	.....
Contusion or laceration of hands.....	29	26	43	.....
Contusion or laceration of fingers.....	70	41	113	4
Dislocation.....	2	2	.....	.....
Internal injuries.....	2	1	6	.....
Sprains.....	6	5	9	.....
Miscellaneous.....	2	3	7	.....
Total injuries.....	219	132	356	15
Killed.....	20	10	24	2
Total killed and injured.....	239	142	380	17

RECAPITULATION.

Total killed.....	56
Total injured.....	72
Total killed and injured.....	75

TABLE 4.—*Causes of accidents to employees classified (C6 and C7) as falling from and getting on or off cars and engines.*

Subclass.	Causes.	Trainmen.		Trainmen in yards.		Yard trainmen (switching crews).		Other employees.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
C6	Fell from roof of box car by reason of—								
	1 Defect in car.....	.....	7	.....	5	.....	5	.....	.....
	2 Ice or snow.....	.....	.....	.....	.....	.....	.....	.....	.....
	3 Parting of train.....	1	16	.....	1	.....	2	.....	3
	4 Derailment, collision, or shock due to abnormal movements of cars other than those in subclass 3.	4	77	1	35	3	96	1	12
	5 While setting brakes.....	5	34	3	15	3	48	.....	2
	6 Fell from—								
	7 Coal car.....	.....	7	1	3	1	8	1	1
	8 Freight car other than box or coal car.....	3	51	2	28	2	24	5	34
	9 Engine or tender.....	10	117	6	59	5	51	3	10
	10 Passenger car.....	.....	19	.....	3	.....	3	.....	4
C7	Engines, tenders, or cars (all kinds) not in motion.....	.....	87	.....	47	.....	29	.....	27
	11 Miscellaneous causes.....	7	272	4	81	2	255	5	36
	12 Not clearly explained.....	7	55	9	25	8	62	1	20
	13 Slipped getting on moving trains or cars.....	5	165	2	69	2	83	8	54
	14 Jumping off moving trains.....	1	170	1	122	3	110	3	55
	15 Jumping from engines or cars anticipating collision, derailment, or other accident.....	1	48	.....	8	2	7	.....	4
	16 Fell from engines or cars by reason of defective handholds and sill steps.....	.....	60	.....	15	.....	50	.....	1
	17 Getting on of off moving engine.....	5	166	3	112	1	124	5	31
	18 Caught in frog, guard rail, or switch.....	.....	4	.....	.....	.....	3	.....	.....
	Total.....	49	1,355	32	628	32	960	32	297

ACCIDENTS ON ELECTRIC RAILWAYS.

TABLE NO. 1E.—*Casualties to persons, July, August, and September, 1910.*

	Number of accidents.	Passengers (a, b, and bb).		Employees on duty (c, cc, d, e, f, and g).		Employees not on duty (h).		Other persons not trespassing (i).		Trespassers (j).		Total persons.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	61	40	352	4	34	.....	.....	.....	.....	.....	.....	44	386
Derailments.....	17	1	62	1	8	.....	.....	.....	2	.....	.....	2	72
Accidents to trains, cars, or engines, except collisions, derailments, and boiler explosions.....	6	.....	8	.....	1	.....	.....	.....	.....	.....	.....	.....	9
Bursting of or defects in locomotive boilers or boiler attachments.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
Total train accidents.....	85	41	422	5	44	.....	.....	.....	2	.....	.....	46	468
Accidents to roadway or bridges not causing derailment, such as fires, floods, landslides, explosions, etc.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Coupling or uncoupling cars (does not include accidents with air or steam hose).....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	3
While doing other work about trains (not in shops or enginehouses) or while attending switches.....	.....	.....	.....	2	20	.....	.....	.....	.....	.....	.....	2	20
Coming in contact, while riding on cars, with overhead bridges, tunnels, or any signal apparatus, or any fixed structure above or at the side of the track.....	.....	1	9	2	8	.....	.....	.....	1	.....	.....	3	18
Falling from cars or engines.....	.....	2	17	3	16	.....	.....	.....	.....	1	.....	5	34
Getting on or off cars or engines.....	.....	4	275	.....	13	.....	2	2	4	1	4	7	298
Other accidents on or around trains not here named.....	.....	.....	46	.....	4	.....	1	.....	2	.....	2	.....	55
Being struck or run over by engines or cars at stations or yards.....	.....	.....	1	2	1	1	.....	3	.....	2	2	8	4
Being struck or run over by engines or cars at highway-grade crossings.....	.....	.....	6	.....	1	.....	.....	12	44	7	9	19	60
Being struck or run over by engine or car at other places.....	.....	.....	3	3	1	1	.....	25	53	24	33	53	90
Other causes.....	.....	.....	8	.....	.....	.....	.....	2	9	1	3	3	20
Total other than train accidents....	.....	7	365	12	67	2	3	44	113	35	54	100	602
Total accidents exclusive of industrial accidents.....	.....	48	787	17	111	2	3	44	115	35	54	146	1,070
Industrial accidents to employees¹.....	.....	.....	.....	2	80	.....	.....	.....	.....	.....	.....	2	80
Grand total.....	.....	48	787	19	191	2	3	44	115	35	54	148	1,150

¹ "Industrial" accidents are those occurring to employees of the railroad on railroad premises in which movements of cars or engines are not involved.

TABLE NO. 2E.—*Collisions and derailments.*

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	30	\$5,284	.....	105
Collisions, butting.....	18	17,030	44	206
Collisions, train separating.....	.....	.....	.....	.....
Collisions, miscellaneous.....	13	8,466	.....	75
Total.....	61	30,780	44	386
Derailments due to defects of roadway, etc.....	3	150	.....	6
Derailments due to defects of equipment.....	.....	.....	.....	.....
Derailments due to negligence of trainmen, signalmen, etc.....	2	750	1	16
Derailments due to unforeseen obstruction of track, etc.....	3	1,175	.....	3
Derailments due to malicious obstruction of track, etc.....	1	150	.....	.....
Derailments due to miscellaneous causes.....	8	3,330	1	47
Total.....	17	5,555	2	72
Total collisions and derailments.....	78	36,335	46	458

[Public—No. 165.]

[H. R. 3649.]

AN ACT Requiring common carriers engaged in interstate and foreign commerce to make full reports of all accidents to the Interstate Commerce Commission, and authorizing investigations thereof by said commission.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be the duty of the general manager, superintendent, or other proper officer of every common carrier engaged in interstate or foreign commerce by railroad to make to the Interstate Commerce Commission, at its office in Washington, District of Columbia, a monthly report, under oath, of all collisions, derailments, or other accidents resulting in injury to persons, equipment, or roadbed arising from the operation of such railroad under such rules and regulations as may be prescribed by the said commission, which report shall state the nature and causes thereof and the circumstances connected therewith: *Provided,* That hereafter all said carriers shall be relieved from the duty of reporting accidents in their annual financial and operating reports made to the commission.

SEC. 2. That any common carrier failing to make such report within thirty days after the end of any month shall be deemed guilty of a misdemeanor, and upon conviction thereof by a court of competent jurisdiction shall be punished by a fine of not more than one hundred dollars for each and every offense and for every day during which it shall fail to make such report after the time herein specified for making the same.

SEC. 3. That the Interstate Commerce Commission shall have authority to investigate all collisions, derailments, or other accidents resulting in serious injury to person or to the property of a railroad occurring on the line of any common carrier engaged in interstate or foreign commerce by railroad. The commission, or any impartial investigator thereunto authorized by said commission, shall have authority to investigate such collisions, derailments, or other accidents aforesaid, and all the attending facts, conditions, and circumstances, and for that purpose may subpoena witnesses, administer oaths, take testimony, and require the production of books, papers, orders, memoranda, exhibits, and other evidence, and shall be provided by said carriers with all reasonable facilities: *Provided,* That when such accident is investigated by a commission of the State in which it occurred, the Interstate Commerce Commission shall, if convenient, make any investigation it may have previously determined upon, at the same time as, and in connection with, the State commission investigation. Said commission shall, when it deems it to the public interest, make reports of such investigations, stating the cause of accident, together with such recommendations as it deems proper. Such reports shall be made public in such manner as the commission deems proper.

SEC. 4. That neither said report nor any report of said investigation nor any part thereof shall be admitted as evidence or used for any purpose in any suit or action for damages growing out of any matter mentioned in said report or investigation.

SEC. 5. That the Interstate Commerce Commission is authorized to prescribe for such common carriers a method and form for making the reports hereinbefore provided.

SEC. 6. That the act entitled "An act requiring common carriers engaged in interstate commerce to make full reports of all accidents to the Interstate Commerce Commission," approved March third, nineteen hundred and one, is hereby repealed.

Sec. 7. That the term "interstate commerce," as used in this act, shall include transportation from any State or Territory or the District of Columbia to any other State or Territory or the District of Columbia, and the term "foreign commerce," as used in this act, shall include transportation from any State or Territory or the District of Columbia to any foreign country and from any foreign country to any State or Territory or the District of Columbia.

Sec. 8. That this act shall take effect sixty days after its passage.

Approved, May 6, 1910.

SPECIAL INFORMATION CONTAINED IN PRECEDING BULLETINS.¹

Each accident bulletin previous to No. 37 contains tables showing the number of passengers and employees killed and injured, and these figures are classified according to cause (see Table No. 1); also tables showing cost of the different classes of train accidents. The causes of accidents to employees in coupling and uncoupling and in falling from cars, etc., are further classified in Tables No. 3 and No. 4. The most serious collisions and derailments are dealt with in a supplementary table (Class A), showing the causes in some detail. Each bulletin is for three months, and No. 1 was for the quarter ending September 30, 1901. Beginning with Bulletin No. 37 the statistics include all railroad accidents, instead of being confined to passengers and employees. The bulletin for the quarter ending June 30 contains, in addition to the quarterly statistics, tables showing the same information for the whole of the fiscal year ending on that date.

Bulletin No. 25 shows 110 passengers killed in train accidents, three collisions and one derailment being responsible for 80 deaths in this class. The number of passengers killed from other causes (mostly their own negligence) also shows a large increase. One of the most serious collisions was due to the misreading of a dispatcher's order, and another to a mistake in sending or receiving the order.

Bulletin No. 26 shows a marked decrease in casualties as compared with preceding quarters, a large falling off in railroad traffic having taken place. The list of "prominent" train accidents includes only three cases which may be classed as notable.

Bulletin No. 27 shows further marked decreases in casualties incident to the large falling off in railroad traffic. The number of passengers and employees killed in train accidents (125) is the smallest since the monthly records were established. The most fatal accident in this quarter was a collision at a street crossing, where 8 passengers in an electric car were killed.

Bulletin No. 28 recorded the smallest number of passengers killed in train accidents (13) ever reported in the quarterly records. The total of passengers and employees killed in train accidents (112) was 13 less than the previous low record (125, Bulletin 27). Of the 13 passengers killed in train accidents, 7 were victims of a butting collision on an electric railroad.

Bulletin No. 29 showed totals far smaller than the corresponding quarter one year previous, but the diminution in the number of casualties, which had continued during the year of depression, seemed to have been checked. The number of passengers killed in train accidents was 53, and there were 8 notable collisions.

Bulletin No. 30 recorded 34 passengers killed in train accidents (including 15 victims of a forest fire). One collision resulted in 8 deaths of passengers, and two derailments killed 16 employees.

Bulletin No. 31, in part, continues the favorable showing of the quarter one year previous (Bulletin 27), though it covers a period of considerable revival of business. One collision caused 20 deaths and 28 injuries.

¹ For notes on Bulletins 1-16, see Bulletin No. 17; for notes on Bulletins 17-24, see Bulletin No. 30.

Bulletin No. 32 shows a total of 99 passengers and employees killed in train accidents—the lowest quarterly record thus far shown. It is to be observed, however, that a butting collision, causing the death of 9 passengers and 1 employee, occurring on an electric road, was not included, the railroad company having failed to make a report of the accident as required by law. The quarter in 1908 with which this one is most naturally compared (Bulletin 28) had one collision on an electric line in which 7 persons were killed.

Bulletin No. 33 shows considerable increases in most of the casualty items, marking the expansion of traffic on all of the principal railroads. Five accidents—4 collisions and 1 derailment—caused 47 deaths.

Bulletin No. 34 shows heavy totals in the casualty lists incident to the great expansion in railroad traffic accompanying the general revival in business. There was no very notable passenger-train accident, but a collision between a work train and a freight killed 14 laborers. The list of causes of prominent collisions is unusually varied.

Bulletin No. 35 shows 110 passengers killed in train accidents, the total in this item being swelled by two great disasters, an avalanche in the State of Washington and a derailment in Iowa.

Bulletin No. 36, for the quarter ending June 30, 1910, shows no accident of notable magnitude, but the totals are all larger than for the same quarter of 1909.



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U. S., Interstate Commerce Commission
Washington, D. C.

Accident Bulletin

No. 38

Railroad Accidents in the United States

During October, November, and December
1910



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1911

ACCIDENT BULLETIN NO. 38

**Collisions, Derailments, and other Accidents
to Trains, Accidents to Roadway,
and Casualties to Persons**

from all causes

on the Railroads of the United States

during the months of

October, November, and December, 1910

INTERSTATE COMMERCE COMMISSION
WASHINGTON, D. C.



WASHINGTON
GOVERNMENT PRINTING OFFICE
1911

THE INTERSTATE COMMERCE COMMISSION.

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RAILROAD ACCIDENTS

IN THE UNITED STATES DURING THE THREE MONTHS
ENDING DECEMBER 31, 1910.

The number of persons killed in train accidents during the months of October, November, and December, 1910, as shown in reports made by the railroad companies to the Interstate Commerce Commission under the "accident law" of May 6, 1910, was 248, and of injured 3,729. Accidents of other kinds, including those sustained by employees while at work, by passengers in getting on or off cars, by travelers at highway crossings, by persons doing business at stations, etc., by trespassers, and others, bring up the total number of casualties, excluding "industrial accidents," to 22,586 (2,659 killed and 19,927 injured). Accidents to employees resulting in slight injuries, which do not prevent the employee injured from performing his accustomed service for more than 3 days in the aggregate during the 10 days immediately following the accident, are not reported. The casualties to passengers have been divided into three classes. Class *a* includes all ordinary passengers. Class *b* includes passengers traveling on freight trains. Class *bb* includes persons who are customarily carried on trains under special arrangements, such as postal clerks and express messengers, employees on Pullman cars, newsboys, livestock tenders, and men in charge of freight. The reported casualties are classified in Table No. 1, given below, and more in detail in Table No. 1B.¹

The statistics here given present the record of the standard railroads, for convenience called "steam roads," in distinction from electric railways. The accident statistics of those electric lines on which interstate traffic is carried, and which, therefore, are subject to the Federal accident law, are given in a second table, No. 1E, and in Table No. 2E.

¹ This bulletin is the second to be issued under the revised accident law. The quarterly bulletins previous to No. 37 included only four classes of accidents, namely, (1) collisions, (2) derailments, (3) casualties to passengers, and (4) casualties to employees on duty. The statistics of other accidents on railroads previous to July 1, 1910, will be found in the annual statistical reports of the Commission.

The class termed "Industrial accidents," as found in the present bulletin, includes a large part of those casualties to employees which in former bulletins have been included in the eighth item ("Other causes") of Table No. 1, as explained in Bulletin No. 37.

TABLE NO. 1.—*Casualties to persons, October, November, and December, 1910.*

Causes.	Num- ber of acci- dents.	Passengers (classes a, b, and bb).		Employees, including em- ployees not on duty.		Other persons.		Total persons.	
		Killed.	In- jured.	Killed.	In- jured.	Killed.	In- jured.	Killed.	In- jured.
1. Collisions.....	1,834	18	974	117	1,120	9	25	144	2,119
2. Derailments.....	1,532	12	588	56	437	7	31	75	1,066
3. Miscellaneous train accidents, in- cluding locomotive-boiler ex- plosions.....	550	.....	39	28	497	1	18	29	554
Total train accidents.....	3,916	30	1,601	201	2,054	17	74	248	3,729
4. Accidents to roadway or bridges not causing derailment, such as fires, floods, landslides, explo- sions, etc.....	85	1	6	.....	27	.....	1	1	34
5. Accidents in connection with rail- road operation other than those to trains or roadway (classes C-3 to C-12, inclusive), not includ- ing industrial accidents.....	.....	65	1,739	734	11,801	1,611	2,624	2,410	16,164
Total.....	.....	96	3,346	935	13,882	1,628	2,699	2,659	19,927
Industrial accidents to employees:									
6. While working on tracks or bridges.....	.....	.....	.....	36	4,239	.....	.....	36	4,239
7. At stations, freight houses, en- gine houses, coaling stations, water stations, etc., where no moving railroad car or engine is involved.....	.....	.....	.....	26	4,847	.....	.....	26	4,847
8. In and around shops.....	.....	.....	.....	21	9,426	.....	.....	21	9,426
9. On boats and wharves.....	.....	.....	.....	3	325	.....	.....	3	325
10. At other places.....	.....	.....	.....	21	1,557	.....	.....	21	1,557
Total casualties in industrial accidents.....	.....	.....	.....	107	20,394	.....	.....	107	20,394
Total casualties in all acci- dents.....	.....	96	3,346	1,042	34,276	1,628	2,699	2,766	40,321

NOTE.—Accidents occurring in connection with railroad operation or distinctively railroad work are covered in the items numbered 1 to 5, inclusive. The same statistics are given more in detail in the double-page table on pages 10 and 11. "Industrial accidents" (items 6 to 10, inclusive) are those occurring to employees of the railroad on railroad premises in which the movement of cars or engines is not involved.

In those classes of items in the foregoing table which are made up on the same basis as under the former law, and which therefore may be compared with the records of a year ago, the totals show decreases in every instance, as will be seen by Table No. 1A below; and the comparison with Bulletin 37, for the quarter immediately preceding this, is favorable also, except under the head of coupling accidents. In connection with the first item of Table No. 1A it is to be observed that in this quarter, as in the one last preceding, the figures here shown should be supplemented by those showing passengers killed in collisions on electric railways (Table No. 1E), for in both these quarters the worst disasters in the record occurred on "interurban" lines. These electric-car collisions are included in Table No. 2A.

TABLE NO. 1A.—*Comparison of principal items with last bulletin and with one year back*

	Bulletin 38.	Bulletin 37.	Bulletin 34.
1. Passengers killed in train accidents.....	30	63	39
2. Passengers killed, all causes.....	96	135	105
3. Employees (on duty) killed in train accidents.....	199	209	205
4. Employees (on duty) killed in coupling.....	60	56	66
5. Employees (on duty) killed, total (Table 1B).....	841	869	968
6. Total, passengers and employees (items 2 and 5, above).....	937	1,004	1,073
7. Other persons killed (including trespassers, nontrespassers, and employees not on duty), all causes.....	1,722	1,944	.....
8. Employees killed in industrial accidents.....	107	132	.....

The total number of collisions and derailments in the quarter now under review was 3,366 (1,834 collisions and 1,532 derailments), of which 241 collisions and 152 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to \$2,831,469. Given more in detail, these facts appear as below (collisions and derailments which cause no death or personal injury and which cause not over \$150 damage to the property of the railroad are not reported):

TABLE NO. 2.—*Collisions and derailments.*

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	405	\$427,895	47	482
Collisions, butting.....	212	462,246	58	663
Collisions, train separating.....	102	37,832	.....	37
Collisions, miscellaneous.....	1,115	570,313	39	937
Total.....	1,834	1,498,286	144	2,119
Derailments due to defects of roadway, etc.....	297	263,186	9	382
Derailments due to defect of equipment.....	709	599,532	10	146
Derailments due to negligence of trainmen, signalmen, etc.....	108	77,957	10	89
Derailments due to unforeseen obstruction of track, etc.....	58	38,176	6	71
Derailments due to malicious obstruction of track, etc.....	15	24,376	7	32
Derailments due to miscellaneous causes.....	345	329,956	33	336
Total.....	1,532	1,333,183	75	1,056
Total collisions and derailments.....	3,366	2,831,469	219	3,175
Total for same quarter of 1909.....	3,206	2,733,890	220	3,731
1908.....	2,684	1,940,133	173	2,616
1907.....	3,964	2,962,470	197	3,813

Following is the usual list of class A train accidents—all in which the damage is reported at \$10,000 or over, notable cases in which passengers are killed, and those doing damage less than \$10,000 and down to \$2,000, wherever the circumstances or the cause may be of particular interest.

TABLE NO. 2A.—Causes of 47 prominent train accidents.

[NOTE.—R stands for rear collision; B, butting collision; M, miscellaneous collisions; D, derailment; P, passenger train; F, freight and miscellaneous trains.]

COLLISIONS.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to engines, cars, and road-way.	Reference to record.	Cause.
1	R	P and P	1	154	\$359	71	Electric car run into by following car by reason of darkness. Leading car had been stopped by some defect and the trolley wheel had been pulled away from the trolley wire, extinguishing tail lights.
2	R	P and P	1	24	2,008	72	Dispatcher, contrary to rule, authorized the running of the second section of a passenger train on a caution card. Engineman also at fault for not keeping a good lookout; he was flagged but did not heed the signal.
3	M	F and F	2	2	2,400	46	Collision at meeting point (5 a. m.). Enginemen and fireman of westbound train, asleep, had run past two automatic block signals and a fusee. Men in charge of eastbound train at fault for encroaching on the time of the westbound, 3 minutes.
4	R	P and P	5	4	2,812	15	Passenger train approached station not under control (6 a. m.). Five drivers in freight caboose killed. Engineman addicted to liquor, but his superiors had not discovered the fact.
5	B	F and F	0	6	2,961	42	Collision at meeting point (4 a. m.). Engineman asleep; had been on duty 4 hours.
6	B	F and F	5	25	2,973	1	Work train and extra freight train collided in dense fog. Men in charge of freight at fault for not protecting their train by sending out flagman.
7	B	P and P	6	18	35,500	81	Disregard of block signals. Engineman reported killed; but it is believed that he had been disabled by sudden sickness or death. See note in text below.
8	R	P and F	3	0	4,874	77	Passenger train (3 a. m.) ran into rear of extra freight. Clear block signal given when block was not clear, by telegrapher 21 years old, of 2 years' experience.
9	B	F and F	3	1	5,000	6	Operator failed to deliver order.
10	B	P and F	0	9	5,200	70	Engineman of light engine overlooked schedule of regular passenger train. No conductor on light engine; engineman experienced; fireman, 21 years old, was on his first trip outside of yard; had been in service in yard 17 days.
11	B	F and F	1	4	5,660	3	Operator failed to deliver order; conductor and engineman neglected to check clearance card against orders in their possession.
12	B	F and F	4	4	6,200	89	Failure to identify train met. See note in text below.
13	B	P and P	36	19	7,500	9	Northbound electric car ran past meeting point. See note in text below.
14	R	F and P	2	21	8,600	13	False clear block signal. See note in text below.
15	B	F and F	3	2	8,700	82	Westbound extra encroached on time of regular eastbound freight; engineman killed; extra had right over second section, but conductor carelessly assumed had right over both first and second. He did not show order to flagman.
16	B	F and F	1	1	9,000	11	Engineman of light engine misread dispatcher's order; fireman did not read it.
17	M	P and F	1	3	10,000	49	Excessive speed and disregard of stop signal at interlocking. Engineman killed.
18	B	P and F	2	13	10,000	52	False clear block signal. See note in text below.
19	B	P and P	0	29	10,150	14	Misplaced switch in yard; low switch stand; engineman and fireman not blamed.
20	B	F and F	1	6	10,475	47	Westbound train ordered to run 2 hours 25 minutes late; ran 2 hours 15 minutes late (3 a. m.). Engineman says he made mistake reading timetable; conductor makes same claim, but superintendent does not admit claim.
21	B	P and F	3	7	10,874	54	Careless running. See note in text below.
22	R	P and F	0	8	14,600	73	Passenger train standing at flag station run into at rear by following freight; operator 6 miles back did not maintain full time interval between trains. Men in charge of both trains also at fault.
23	M	P and P	0	28	14,700	39	False clear block signal. See note in text below.

TABLE NO. 2A.—Causes of 47 prominent train accidents—Continued.

COLLISIONS—Continued.

No.	Class.	Kind of train.	Killed.	Injured.	Damage to en- gines, cars, and road- way.	Reference to record.	Cause.
24	M	P and F.....	1	18	16,700	87	Passenger train approached station with speed not under proper control; yard engine on main track without protection. Engineman of pas- senger train killed.
25	B	P and P.....	6	29	18,300	7	Operator failed to deliver order. See note in text below.
26	B	F and F.....	8	1	27,600	53	Conductor and engineman of westbound train overlooked schedule of eastbound (4 a. m.). These 2 men were killed.
27	B	F and F.....	3	11	50,000	83	Train of 13 dump cars became uncontrollable on steep descending grade. It is believed that an angle cock accidentally became closed.
28	R	P and F.....	1	10	15,000	90	Careless running, and failure of flagman to protect standing car. (Electric cars.)
Total.....			99	457	318,146		

DERAILMENTS.

1	D	P.....	1	1	\$1,000	38	Improper fitting of miter rail joint at drawbridge See note in text below.
2	D	P.....	3	58	2,500	31	Excessive speed; 60 miles an hour on track where the highest allowable speed was 30 miles an hour; conductor and engineman both experienced.
3	D	F.....	3	0	4,919	103	Excessive speed on curve; engineman was making his fourth trip on this division.
4	D	P.....	0	2	7,200	36	False clear signal. See note in text below.
5	D	P.....	0	19	8,600	94	Defective side bearing of tender.
6	D	F.....	0	0	10,000	18	Broken flange.
7	D	F.....	0	0	10,259	61	Broken axle.
8	D	P.....	0	1	10,700	60	Excessive speed through crossover. Engineman (3 a. m.) failed to observe distant signal.
9	D	F.....	0	0	10,860	59	Runaway on steep descending grade. See note in text below.
10	D	F.....	0	0	11,100	21	Runaway on steep descending grade. In prepar- ing to move standing cars, the hand brakes were released before the air reservoir was filled.
11	D	P.....	1	45	11,259	98	Derailed at frog because of absence of guard rail. Guard rail had been torn up by some cause un- discovered.
12	D	F.....	0	0	12,000	91	Part of brake rigging fell on track.
13	D	F.....	0	0	12,819	95	Broken arch bar in truck of coal car.
14	D	P.....	1	14	14,000	35	Misplaced switch (4 a. m.). Switch had been run through by a freight train traveling in the oppo- site direction.
15	D	F.....	0	3	15,000	27	At derailing switch at end of double track; exces- sive speed on descending grade.
16	D	F.....	0	0	15,859	25	Broken truck (arch bar).
17	D	P.....	4	18	19,235	101	Undiscovered; speed 40 miles an hour; curvature of track 6 degrees; track in good condition. Four mail clerks killed.
18	D	F.....	2	2	20,200	26	Undiscovered.
19	D	P.....	0	55	36,000	23	Failure of top chord of lattice girder br'dge, 76 feet long. Plan of bridge provided a sufficient factor of safety; "failure of material a mystery."
Total.....			15	218	233,510	.....
Total collisions and derailments.....			114	675	551,656	.....

Collision No. 7 was a butting collision of passenger trains on a double-track railroad; the westbound train having been turned on to the eastbound track for a few miles in consequence of an obstruction on the westbound track. When it had nearly reached the point

where it would be returned to the westbound track and while running at about 25 miles an hour, it was met by an eastbound train running at about 45 miles an hour. The collision occurred at about 2 a. m. The eastbound train had run past one distant and three home signals set against it. The engineman was killed and it is not known how he came to disregard the signals; but the superintendent reaches the conclusion that probably he had been disabled by sudden sickness or by sudden death. He was 55 years old and had been a careful and painstaking engineman for 26 years. About 10 months before the date of the accident he had taken a vacation of considerable length because of ill-health, and at the investigation of the accident it was disclosed that he had recently been taken sick on the street. At one time he had been unconscious for about 40 minutes in a fainting spell, with apparently complete suspension of animation; but there were no indications of sickness when he reported for duty on the trip which ended in the collision.

Collision No. 12 between westbound and eastbound freight trains, about 3 a. m., was due to the failure of the men on the westbound train to identify eastbound trains which they met. The engineman of the westbound train was killed and his neglect is unexplained. This train was ordered to meet two eastbound trains at G, and the conductor and the other surviving members of the crew say that they thought they saw the tail lights of two trains at that station; but they admit that they did not take care to see whether there were two engines. The eastbound train which was met at G sounded a whistle signal to indicate that a second section of the same train was following, and this whistle signal was answered by a whistle signal from the engine of the westbound train; but it is the conclusion of the superintendent that this answer was given by the fireman and that the engineman was asleep.

Collision No. 13 occurred on an electric interurban railway. It was between a northbound and a southbound passenger train, each "train" consisting of a single car. Both were running at a speed of about 35 miles an hour immediately before the collision, and both were badly wrecked. The collision was due to forgetfulness of the men in charge of the northbound train. They ran their car about 2½ miles beyond the point at which they should have met the southbound, this point having been fixed by an order that had been issued to them by the train dispatcher.

The motorman at fault has absolutely no explanation to give as to how he came to forget the order. He had been on duty only 18 minutes, having just begun his trip. He had been in the employ of the road about four years, and is spoken of in the report as a careful and competent employee.

The conductor of this car claims to have observed that the motorman was running past the appointed meeting place, and says that he gave a signal of one stroke on the bell, indicating "stop"; but the motorman denies that he received such a signal, claiming that he received a signal of two strokes, meaning "proceed." The superintendent holds that the conductor, instead of giving the ordinary stop signal, should have given the emergency stop signal provided for in the rules. This was not done. The conductor says that when he noticed that the motorman did not obey the stop signal he assumed that he (the motorman) had received further orders; and the conductor started toward the front of the car to inquire as to this. He was stopped, however, by a passenger who asked him a question, and before he had finished talking with the passenger the collision had occurred. The conductor had been employed by the company about three months, and his record up to the time of the collision was clear. He had previously and for several years been employed as night agent at a station on a large railroad and brought recommendations from that road as a capable man, sober, industrious, and honest; and as one whose work had been satisfactory.

Collision No. 14 was due, primarily, to a false clear block signal. A passenger train, standing at a station, was run into at the rear by two engines, coupled together, without train, and the rear car of the passenger train was wrecked, and was destroyed by fire, illuminating gas from its ruptured pipes having been ignited by sparks in the front end of the colliding engine, which was broken. The station at which the passenger train was standing was at about the middle of the block section. The block section (manual) extends from C, 2 miles west of this station, to S, 2 miles east of it. The passenger train had been delayed eight minutes by a defective coupler, and the rear brakeman is held at fault for not having gone back with red signals to stop any following train. The conductor is also held at fault for not having seen that this was done. The rear passenger car of the train was empty at the moment of the collision, and the two persons killed and three of the injured were standing, at the moment of the collision, on the track between the engine of the passenger train and its leading car, the defective coupler having been at this point. The signalman at C had had four and one-half months' experience, but had been a telegrapher for three years before that.

Collision No. 18 was due to a false clear block signal given by a signalman who was confused. He omitted to examine the block sheet, and also gave misleading information to the dispatcher. He gave a clear block signal and also a clearance card to a westbound work train. This train was delayed and did not start at the time expected, and the signalman, being called upon to admit another

TABLE NO. 1B.—Casualties to passengers, emp

	Passengers (a).		Passengers on freight trains (b).		Persons carried under agreement or contract (bb).		Total (a, b, and bb).		Trainmen (c).		Train in yards
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	
Collisions.....	3	815	9	31	6	128	18	974	82	572	2
Derailments.....	5	491	1	25	6	72	12	588	40	299	1
Accidents to trains, cars, or en- gines, except collisions, derail- ments, and boiler explosions.....		27		2		10		39	1	150	
Bursting of, or defects in, loco- motive boilers or boiler attach- ments.....									24	215	1
Total train accidents.....	8	1,333	10	58	12	210	30	1,601	147	1,236	10
Accidents to roadway or bridges not causing derailment, such as fires, floods, landslides, ex- plosions, etc.....	1	5				1	1	6		9	
Coupling or uncoupling cars (does not include accidents with air or steam hose).....									23	270	1
While doing other work about trains (not in shops or engine houses) or while attending switches.....									8	3,029	1
Coming in contact while riding on cars, with overhead bridges, tunnels, or any signal appara- tus, or any fixed structure above or at the side of the track.....		5				1		6	17	220	3
Falling from cars or engines.....	16	86		3	5	7	21	96	51	639	11
Getting on or off cars or engines.....	23	664		18	1	15	24	697	17	871	3
Other accidents on or around trains not here named.....	4	586		81	2	140	6	807		7	
Being struck or run over by en- gine or car at stations or yards.....	13	37		2		2	13	41	16	27	3
Being struck or run over by en- gine or car at highway grade crossings.....		1						1		2	
Being struck or run over by en- gine or car at other places.....									14	24	1
Other causes.....	1	86				5	1	91	4	89	1
Total, other than train ac- cidents.....	58	1,470		104	8	171	66	1,745	150	5,207	20
Grand total.....	66	2,803	10	162	20	381	96	3,346	297	6,443	30

other persons; October, November, and December, 1910.

Train- ing (d).	Switch tenders, crossing tenders, and watch- men (e).		Track- men and bridge- men (f).		Other employ- ees (g)		Total employ- ees on duty (c, cc, d, e, f, and g).		Em- ployees not on duty (h).		Other per- sons not trespass- ing (i).		Trespass- ers (j).		Total persons.	
	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
168 50	..... 1	3	7 2	59 20	4 2	97 17	115 56	1,093 422	2	27 15	2	16 14	7 7	9 17	144 75	2,119 1,056
23	.....	.....	.....	3	.....	7	2	205	.....	.....	1	14	.....	.....	3	258
41	.....	.....	.....	.....	.....	5	26	292	.....	.....	.....	.....	.....	4	26	296
282	1	3	9	82	6	126	199	2,012	2	42	3	44	14	30	248	3,729
3	.....	.....	.....	4	.....	4	.....	27	.....	.....	.....	1	.....	.....	1	34
415	.....	5	.....	.....	5	14	60	877	.....	.....	.....	.....	.....	.....	60	877
1,157	1	38	.....	18	6	128	39	5,356	.....	1	.....	1	.....	.....	39	5,358
128 535 775	..... ..... 2	1 12 13	..... 6 5	3 23 49	2 4 10	5 102 115	23 108 50	429 1,669 2,257	1 1 8	3 13 68	..... 4 6	..... 15 45	4 99 111	11 109 319	28 233 199	449 1,902 3,386
7	.....	2	.....	35	1	121	1	175	1	21	.....	112	10	41	18	1,156
82	11	17	54	70	71	136	209	400	32	19	38	122	266	248	558	830
1	5	8	1	1	4	3	10	15	3	2	233	663	35	32	281	713
4 25	5	3 20	79 3	83 25	29 5	42 66	128 14	157 262	41 5	15 62	18 12	53 423	746 29	345 85	933 61	570 923
3,132	24	119	148	311	137	736	642	11,624	92	204	311	1,435	1,300	1,190	2,411	16,198
3,414	25	122	157	393	143	862	841	13,636	94	246	314	1,479	1,314	1,220	2,659	19,927

train to the block section, canceled (on his record) the right of the work train to the block, without communicating with the work-train conductor, and then he authorized the station at the other end of the block to give a clear signal to an eastbound train. This signalman had been in the service three months.

Collision No. 21, which occurred at midnight on a cold and stormy night, was due to a lack of caution on the part of the engineman of a passenger train. This engineman was killed. A helping engine, attached to the front of the train, had just been detached and run forward about 1,500 feet to be backed into a sidetrack, so as to allow the passenger train to proceed on its way. On account of the switch of the sidetrack being frozen, the helping engine was run forward some distance to another sidetrack, and just as it was backing into this track it was struck by the passenger train. The engineman of the helping engine says that he sounded two blasts of the whistle to indicate to the engineman of the passenger train what was being done. It is supposed that the engineman of the passenger train misinterpreted this whistle signal, assumed that it meant that the helping engine was clear of the main track, and did not notice that it had gone forward to the second switch. It appears that he ran his engine into the helping engine without seeing it. An eastbound train, passing at the time, was damaged by the engines which were derailed in the collision.

Collision No. 23, which occurred about 2 a. m., was between eastbound and westbound passenger trains, and was due principally to the error of a telegrapher in giving a clear block signal wrongfully. The westbound train was entering the sidetrack at a point about 750 feet east of the station, and it was struck in the side by the eastbound, which had been started from the station in consequence of the clear block signal erroneously given. It was the duty of the telegrapher in the station to know positively from his own observation that the westbound train was in the sidetrack, clear of the main line, before giving the clear signal to the eastbound train. The engineman and fireman of the eastbound knew that they were to meet the westbound at this station, and are also held blameworthy for proceeding without knowing that the main track was clear. The engineman said that he was deceived by an "all right" hand signal given by some person standing on the main track in the vicinity of the westbound train. The superintendent finds that no such hand signal was given, but thinks it possible that the engineman saw a signal which was given by a brakeman of the westbound train to the engineman of his own train.

Collision No. 25 was due to failure on the part of a telegraph operator to deliver an order to an eastbound train. This order, sent to the operator at M and requiring the eastbound train to wait at

ACCIDENTS ON ELECTRIC RAILWAYS.

TABLE NO. 1E.—Casualties to persons, October, November, and December, 1910.

	Number of accidents.	Passen- gers.		Em- ployees on duty.		Em- ployees not on duty.		Other persons not tres- passing.		Tres- passers.		Total persons.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Collisions.....	46	34	345	6	31	....	4	....	1	....	....	40	381
Derailments.....	21	....	60	....	13	....	....	1	1	....	....	1	74
Accidents to trains, cars, or engines, ex- cept collisions, derailments, and boiler explosions.....	2	....	2	....	....	....	....	....	....	....	....	....	2
Bursting of or defects in locomotive boll- ers or boiler attachments.....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total train accidents.....	69	34	407	6	44	....	4	1	2	....	....	41	457
Accidents to road way or bridges not caus- ing derailment, such as fires, floods, landslides, explosions, etc.....	1	....	....	....	....	....	....	....	....	....	....	....	....
Coupling or uncoupling cars (does not in- clude accidents with air or steam hose). While doing other work about trains (not in shops or engine houses) or while at- tending switches.....	....	....	....	....	5	....	....	....	....	....	....	....	5
Coming in contact, while riding on cars, with overhead bridges, tunnels, or any signal apparatus, or any fixed structure above or at the side of the track.....	....	....	....	....	25	....	....	....	....	....	....	....	25
Falling from cars or engines.....	....	....	1	....	2	....	....	....	1	....	....	....	4
Getting on or off cars or engines.....	....	3	19	4	14	....	2	....	....	....	2	4	37
Other accidents on or around trains not here named.....	....	....	197	....	12	....	2	....	4	....	3	3	218
Being struck or run over by engines or cars at stations or yards.....	....	....	32	2	....	....	....	....	1	1	....	3	38
Being struck or run over by engines or cars at highway-grade crossings.....	....	1	1	1	4	1	....	1	5	....	3	4	13
Being struck or run over by engines or cars at other places.....	....	1	1	....	....	....	....	16	43	4	2	21	46
Other causes.....	....	3	....	2	1	....	....	8	59	21	7	34	67
Total other than train accidents....	....	....	15	....	....	....	....	....	3	....	2	....	20
Total accidents exclusive of indus- trial accidents.....	....	8	266	9	63	1	4	25	116	26	19	69	468
Industrial accidents to employees ¹.....	....	42	673	15	107	1	8	26	118	26	19	110	925
Grand total.....	....	42	673	19	213	1	8	26	118	26	19	114	1,031

¹ "Industrial" accidents are those occurring to employees of the railroad on railroad premises in which movements of cars or engines are not involved.

TABLE NO. 2E.—Collisions and derailments.
OCTOBER, NOVEMBER, AND DECEMBER, 1910.

	Number.	Loss.	Killed.	Injured.
Collisions, rear.....	25	\$32,983	2	272
Collisions, butting.....	10	11,320	38	88
Collisions, train separating.....	....	....	....	....
Collisions, miscellaneous.....	11	4,275	....	21
Total.....	46	48,578	40	381
Derailments due to defects of roadway, etc.....	3	50	....	17
Derailments due to defects of equipment.....	1	....	....	3
Derailments due to negligence of trainmen, signalmen, etc.....	5	104	1	6
Derailments due to unforeseen obstruction of track, etc.....	2	....	....	13
Derailments due to malicious obstruction of track, etc.....	....	....	....	....
Derailments due to miscellaneous causes.....	10	945	....	35
Total.....	21	1,099	1	74
Total collisions and derailments.....	67	49,677	41	455